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ABSTRACT

Intended to help library media specialists, technology educators, and curriculum planning teams identify where specific information and technology competencies might best fit into the assessed content areas of the curriculum, this document presents a matrix that identifies the correlation between Wisconsin's Information and Technology Literacy (ITL) Standards and English language arts, mathematics, science, and social studies standards. An introductory section describes the Matrix Project, the Matrix Project Advisory Group, academic standards definitions, the matrix models, and the list of integration resources. The second section presents Matrix Model 1, which correlates content standards for each of the four curriculum areas with the ITL Standards. The third section presents Matrix Model 2, which separates the four content standards of the ITL Standards (i.e., media and technology, information and inquiry, independent learning, and the learning community) and arranges them by three grade ranges--K-4, 5-8, and 9-12. The final section provides a listing of resources and resource providers for those educators desiring additional information or ideas on how to integrate information and technology competencies into curriculum and classroom instruction; several World Wide Web sites that contain evaluated lesson plans, many of which incorporate information and technology skills, are included. (MES)

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Information & Technology Literacy

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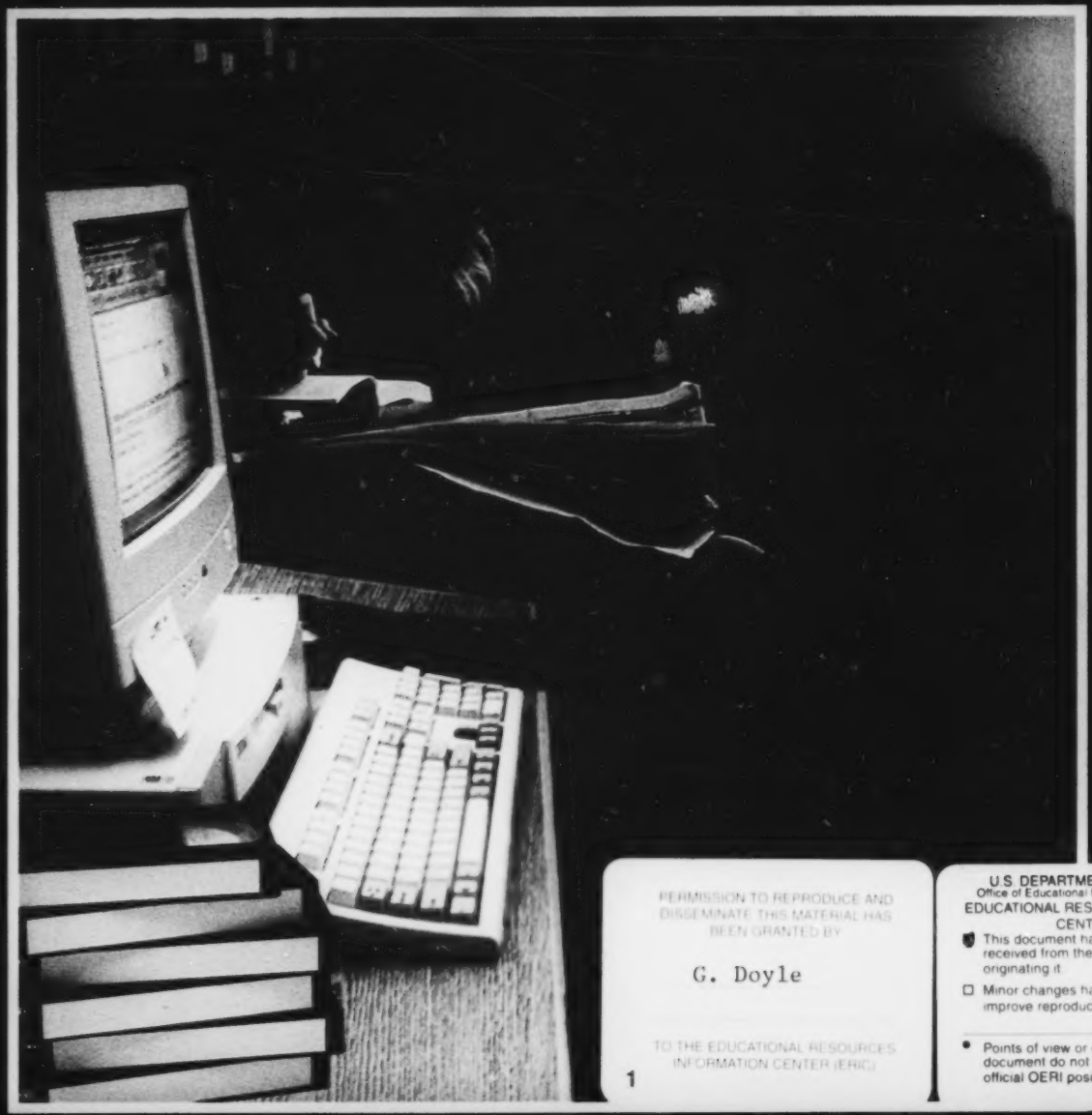

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Information & Technology Literacy Standards Matrix

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Foreword

Teachers throughout the state have made considerable progress in transforming Wisconsin's Academic Content and Performance Standards into lesson plans and classroom learning activities. Sometimes integrating the information and technology literacy components into the rest of the curriculum has presented a challenge. This publication will make that integration easier.

With this new tool, curriculum development teams can identify easily where information and technology competencies fit best into the various content areas of the curriculum. As they construct their lesson plans and learning activities, teachers will be able to take advantage of the abundance of learning resources that exist today and the many forms of instructional technology.

With information and technology concepts built into learning activities, students will learn how to access, evaluate, and use information and technology along with developing knowledge and skills in the content areas.

I commend the members of the advisory group who helped department staff develop this publication. Their insights, based on day-to-day experience with students and professional colleagues, are invaluable in developing useful and practical guides that help our teachers to be the best in the world.

John T. Benson
State Superintendent

Preface

September 1, 1998 marked the publication of *Wisconsin's Model Academic Standards for Information & Technology Literacy*. For the first time, the Wisconsin Department of Public Instruction published standards that identify and define the knowledge and skills essential for all Wisconsin students to access, evaluate, and use information and technology. The conceptual framework of these standards details a progression from the physical access skills for the use of media and technology, to the intellectual access skills of information use, to skills and attitudes for learning independently, and finally to the skills needed for working responsibly and productively within groups.

This set of standards is unique in that it is the first set of standards to bring together and merge the two new national standards that address information and technology standards. The two national standards are the *National Educational Technology Standards for Students* published by the International Society for Technology in Education and the *Information Literacy Standards for Student Learning* developed jointly by the American Association of School Librarians and the Association for Educational Communications and Technology. This set of standards is also unique in that the competencies they identify are designed for integration into the various content areas of the school curriculum rather than defining a separate, discrete new PK-12 technology curriculum.

In order to assist PK-12 educators and curriculum planning teams in the integration process, the Instructional Media and Technology (IMT) Team of the Division for Libraries, Technology and Community Learning determined that some curriculum planning guides or tools would need to be developed to facilitate that process. A standards matrix, showing where the competencies in the Information & Technology Literacy Standards might correlate with competencies defined in the other content area standards, was given priority status. It was further determined that the standards matrix should focus on the correlation between the Information & Technology Literacy (ITL) Standards and the four assessed standards of English Language Arts, Mathematics, Science and Social Studies. These are curricular areas required for all students. The correlation with other standards and disciplines could be addressed at a later date.

The result of the matrix initiative is this publication, the *Information & Technology Literacy Standards Matrix*. Hopefully, it will provide valuable insights for library media specialists, instructional technology coordinators, curriculum directors and teachers as they plan for the integration of information and technology literacy competencies into the school curriculum and classroom instruction.

Acknowledgments

The *Information & Technology Literacy Standards Matrix* would not have been possible without the efforts of many people. Members of the Standards Matrix Advisory Group gave generously of their time and professional expertise in providing valuable input and suggestions into the content and organization of the matrix publication.

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A number of people from the Department of Public Instruction (DPI) contributed ideas, input and assistance to the Information & Technology Literacy Standards Matrix Project. From the Division for Libraries, Technology, and Community Learning, the Division Administrator, Calvin J. Potter, provided encouragement and valuable suggestions for the project. The Instructional Media and Technology Team (IMT) under the direction of Neah Lohr, with team members Richard Sorensen, Robert Roy, Stuart Ciske, Steven Sanders, and Kathy Boguszweski provided ongoing evaluative input throughout the many drafts of the matrix publication.

Several people from other divisions or teams within the DPI provided input and suggestions as well. From the Division for Learning Support: Instructional Services, the Division Administrator, John D. Fortier, provided suggestions and support for the project. Susan Grady, Director of the Content and Learning Team (CALT), and Gerhard Fischer, Education Program Coordinator, provided valuable input for the matrix publication and facilitated feedback and suggestions from the CALT curriculum consultants. Several of the Content and Learning Team consultants provided valuable suggestions and information for one or more of the sections of the publication.

Finally, other staff members at the DPI provided a great deal of information processing and technical assistance to the organization, layout, and printing of this standards matrix. Special thanks go to Greg Doyle, Sandi Ness, Kathy Addie, Karen Nowakowski, Cathy Debevec, Amy French and Jan Mielke. Their talents and assistance are greatly appreciated.

Introduction

Background

In September of 1998, Wisconsin's Model Academic Standards for Information and Technology Literacy (ITL) were published and distributed to all school districts. These standards identify and define the knowledge and skills essential for all Wisconsin students to access, evaluate, and use information and technology. The ITL Standards combine in a single conceptual framework information processing skills along with the technology competencies necessary for success in today's global society. This set of standards is unique in that they are designed for integration into the various content areas of the school curriculum. Their focus is on learning *with* information and technology rather than learning *about* information and technology.

The implementation of Wisconsin's Academic Standards is the responsibility of all school instructional and administrative staff. Relative to technology, Standard k, one of Wisconsin's 20 School District Standards, states that, "computer literacy objectives and activities shall be integrated into the kindergarten through grade 12 sequential curriculum plans." However, when districts are presented with a standards model that is designed for integration into other curricular areas, the job of making that infusion happen is difficult and one that requires ongoing attention and support. Who should provide the primary leadership for the ITL Standards? Where do we start, and how do we make them happen in our schools? How do they relate to the other standards, and where might the ITL competencies best link into the various curricular areas, especially the four assessed areas of English Language Arts, Mathematics, Science and Social Studies?

The Matrix Project

The ITL Standards were mainly written by and for school library media specialists, instructional technology coordinators, and computer teachers/integrators in the PK-12 schools of Wisconsin. Immediately after the publication of the ITL Standards, those professionals began to request assistance on how to integrate and infuse these standards into the various content area curriculums and classroom instruction. In November of 1999, the Instructional Media and Technology (IMT) Team in the Division for Libraries, Technology, and Community Learning of the Wisconsin Department of Public Instruction developed an initiative known as the ITL Standards Matrix Project. A part-time consultant was hired to develop a matrix to identify and document the correlation between the Information and Technology Literacy Standards and the English Language Arts, Mathematics, Science, and Social Studies Standards (other curricular standards may be addressed in the future). This publication should help library media specialists, technology educators, and curriculum planning teams identify where specific information and technology competencies might best "fit into" the assessed content areas of the curriculum. Hopefully, the leadership and curriculum collaboration efforts of those professionals will be effective in integrating the ITL Standards within the school system curriculum creating a more active, engaged and productive learning environment for all students.

Matrix Project Advisory Group

The development of the matrix publication was greatly aided by an ITL Standards Matrix Advisory Group with representation from school, district, and CESA library media, technology and curriculum educators and administrators. The purpose of the advisory group was to evaluate matrix project models and drafts to determine their utility for curriculum planning in Wisconsin school districts. Four different matrix models were identified and evaluated by the advisory group. Two were subsequently selected for full development and inclusion in this publication. Many excellent ideas and recommendations came from the skilled practitioners on the advisory group.

Academic Standards Definitions

Before describing the models themselves, some definitions are essential. All of Wisconsin's Academic Standards are made up of content and performance standards, and several of them also contain what are known as performance indicators. *Content standards* are broad statements that describe what students should know and be able to do (e.g., "Students in Wisconsin will select and use media and technology to access, organize, create, and communicate information for solving problems and constructing new knowledge, products, and systems"). Under content standards, we have *Performance standards* that tell how students will show that they are meeting the content standard (e.g., "Students will use a computer and communications software to access and transmit information"). *Performance indicators* (usually noted by bullets) describe specific activities students might perform that show or indicate they are proficient in terms of a specific performance standard. In the ITL Standards there are usually 5-8 performance indicators listed below each performance standard. For example, some of the indicators for the performance standard, " Students will use a computer and communications software to access and transmit information," are that students might demonstrate they can-

- generate, send, retrieve, save, and organize electronic messages
- log on and view information from sites on the Internet
- identify and use simple search engines and directories
- send an e-mail message with an attachment to several persons simultaneously

The Matrix Models

With the definitions in mind, the first and most comprehensive matrix model divides the page into two columns. In the left-hand column are the performance standards and indicators from each of the four assessed standards, starting with English Language Arts, followed by Mathematics, Science and Social Studies. The right-hand column provides the related performance standards and indicators from the ITL Standards. Hopefully, this table will help school leaders determine where ITL competencies might best be integrated into specific curricular areas. For example, the model indicates a clear correlation between the performance standards and indicators in the English Language Arts (ELA) Writing Standard and the elementary keyboarding skills identified in the ITL Standards. Thus, a case could be made that beginning keyboarding should become a part of the elementary ELA Curriculum. The ITL Standards do not address who should teach those skills, but they clearly show that it would make good sense to teach keyboarding skills as an integral part of the writing process at the elementary level.

The second matrix model, utilizing a four-column format, provides a different way of looking at the correlation(s) between the four assessed standards and the ITL Standards. It separates the four content standards of the ITL Standards and arranges them by the three grade ranges. Thus, the first chapter of the

model addresses only the Media and Technology Content Standards that should be met "by the end of Grade 4." The next chapter addresses the Information and Inquiry Content Standards "by the end of Grade 4." The final two chapters of this section address the Independent Learning and the Learning Community Content Standards. The middle section of the model addresses the same four content standards, but "by the end of Grade 8," and the final section, "by the end of Grade 12." Each subject area column lists the content standards from one of the four assessed standards (e.g., ELA, Math, etc.), and under each content standard are found the ITL performance indicators that correlate with specific knowledge or skills identified within the subject area content standards.

Each matrix model provides a different way of looking at how the ITL Standards correlate with the four assessed standards, and each model may be of greater or lesser value to different curriculum planning groups. School leaders can choose the format that best addresses their curriculum planning needs.

Integration Resources List

The final section of this publication provides a listing of resources and resource providers for those educators desiring additional information or ideas on how to integrate information and technology competencies into curriculum and classroom instruction. Several excellent web sites that contain evaluated lesson plans, many of which incorporate information and technology skills, are included in the resource list. Other sources identify integration resources and provide information on standards, curriculum frameworks, technology planning, instructional resources, assessment and evaluation, and staff development.

Matrix Model 1

English Language Arts

Content Standards:

A. Reading and Literature
B. Writing
C. Oral Language
D. Language
E. Media and Technology
F. Research and Inquiry

A. Reading and Literature

By the end of grade 4 students will:

A.4.1 Use effective reading strategies to achieve their purposes in reading

- Use a variety of strategies and word recognition skills, including rereading, finding context clues, applying knowledge of letter-sound relationships, and analyzing word structures
- Infer the meaning of unfamiliar words in the context of a passage by examining known words, phrases, and structures
- Demonstrate phonemic awareness by using letter/sound relationships as aids to pronouncing and understanding unfamiliar words and text
- Comprehend reading by using strategies such as activating prior knowledge, establishing purpose, self-correcting, self-monitoring, rereading, making predictions, finding context clues, developing visual images, applying knowledge of text structures, and adjusting reading rate according to purpose and difficulty
- Read aloud with age-appropriate fluency, accuracy, and expression
- Discern how written texts and accompanying illustrations connect to convey meaning

Information & Technology Literacy

Content Standards:

A. Media and Technology
B. Information and Inquiry
C. Independent Learning
D. The Learning Community

C.4.3 Develop competence and selectivity in reading, listening, and viewing

- identify new information and integrate it with prior knowledge—B.4.6
- identify new information and integrate it with prior knowledge—B.4.6
- choose materials at appropriate developmental levels—C.4.3
- recognize that graphics and images can be used to convey a message—B.4.4

- Identify and use organizational features of texts, such as headings, paragraphs, and format, to improve understanding

- Identify a purpose for reading, such as gaining information, learning about a viewpoint, or appreciating literature

- recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3
- recognize the common organizational characteristics of print media (e.g., title page, table of contents, copyright statement, index)—A.4.2
- recognize different ways to organize ideas, concepts, and phrases—B.4.2
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- identify topics of interest and seek relevant information about them—C.4.1
- recognize that information can be used to make decisions or satisfy personal interest—C.4.1
- recognize that accurate information is basic to sound decisions—C.4.1
- recognize that award winning books reflect literary and artistic excellence—C.4.2
- recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3

A.4.2 Read, interpret, and critically analyze literature

- Recognize and recall elements and details of story structure, such as sequence of events, character, plot, and setting, in order to reflect on meaning
- Draw upon a reservoir of reading materials, including fairy tales, fables, and narratives from the United States and cultures worldwide, to understand plots, make predictions, and relate reading to prior knowledge and experience

C.4.3 Develop competence and selectivity in reading, listening, and viewing

- recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3

- identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2
- recognize that materials in the school library media center are organized in a systematic manner—B.4.3
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- identify new information and integrate it with prior knowledge—B.4.6
- relate literature and other creative expressions of information to personal experiences—C.4.2
- compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2
- choose materials at appropriate developmental levels—C.4.3
- identify materials that reflect diverse perspectives
- differentiate among written, oral, and visual forms of literature—C.4.3

- Summarize ideas drawn from stories, identifying cause-and-effect relationships, interpreting events and ideas, and connecting different works to each other and to real-life experiences

- Extend the literal meaning of a text by making inferences, and evaluate the significance and validity of texts in light of prior knowledge and experience

- recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3
- relate literature and other creative expressions of information to personal experiences—C.4.2
- compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2
- identify new information and integrate it with prior knowledge—B.4.6

A.4.3 Read and discuss literary and nonliterary texts in order to understand human experience

- Demonstrate the ability to integrate general knowledge about the world and familiarity with literary and nonliterary texts when reflecting upon life's experiences
- Identify and summarize main ideas and key points from literature, informational texts, and other print and nonprint sources

- Distinguish fiction from nonfiction, realistic fiction from fantasy, biography from autobiography, and poetry from prose

- Select a variety of materials to read for discovery, appreciation, and enjoyment, summarize the readings, and connect them to prior knowledge and experience

C.4.2 Appreciate and derive meaning from literature and other creative expressions of information

- relate literature and other creative expressions of information to personal experiences—C.4.2

- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- differentiate between copying and summarizing—D.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- differentiate between fiction and nonfiction resources—B.4.4
- select more than one resource when appropriate—B.4.2
- choose resources appropriate to their interests, abilities, and information need—B.4.4
- identify new information and integrate it with prior knowledge—B.4.6
- choose fiction and other literature of personal interest—C.4.2
- relate literature and other creative expressions of information to personal experiences—C.4.2
- compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2
- differentiate between copying and summarizing—D.4.2

A.4.4 Read to acquire information

- Summarize key details of informational texts, connecting new information to prior knowledge

C.4.1 Pursue information related to various dimensions of personal well-being and academic success

- take notes or record information in their own words—B.4.5

- record the sources of information as notes are taken—B.4.5
- recognize the need to identify the author of any information copied verbatim—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- list basic bibliographic sources for information used—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- differentiate between copying and summarizing—D.4.2

- Identify a topic of interest and seek information about it by investigating available text resources

- identify topics of interest and seek relevant information about them—C.4.1
- recognize that information can be used to make decisions or satisfy personal interest—C.4.1

By the end of grade 8 students will:

A.8.1 Use effective reading strategies to achieve their purposes in reading

- Use knowledge of sentence and word structure, word origins, visual images, and context clues to understand unfamiliar words and clarify passages of text

- Use knowledge of the visual features of texts, such as headings and bold face print, and structures of texts, such as chronology and cause-and-effect, as aids to comprehension

- Establish purposeful reading and writing habits by using texts to find information, gain understanding of diverse viewpoints, make decisions, and enjoy the experience of reading

C.8.3 Develop competence and selectivity in reading, listening, and viewing

- choose materials at appropriate developmental levels—C.8.3
- identify and select materials that reflect diverse perspectives—C.8.3
- identify characteristics of common literary forms—C.8.3
- recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
- compare and integrate new information with prior knowledge—B.8.6
- recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- select multiple sources that reflect differing or supporting points of view—B.8.2

- identify information appropriate for decision-making and personal interest—C.8.1
- identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2
- identify and select materials that reflect diverse perspectives—C.8.3

- Select, summarize, paraphrase, analyze, and evaluate, orally and in writing, passages of texts chosen for specific purposes

- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- record concise notes in a prescribed manner, including bibliographic information—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- analyze information for relevance to the question—B.8.6
- analyze findings to determine need for additional information—B.8.6
- gather and synthesize additional information as needed—B.8.6
- draw conclusions to address the problem or question—B.8.6
- identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2
- relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2

A.8.2 Read, interpret, and critically analyze literature

- Identify the defining features and structure of literary texts, such as conflict, representation of character, and point of view

- Analyze the effect of characters, plot, setting, language, topic, style, purpose, and point of view on the overall impact of literature

- Draw on a broad base of knowledge about the genres of literature, such as the structure and conventions of essays, epics, fables, myths, plays, poems, short stories, and novels, when interpreting the meaning of a literary work

- Develop criteria to evaluate literary merit and explain critical opinions about a text, either informally in

C.8.3 Develop competence and selectivity in reading, listening, and viewing

- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- identify characteristics of common literary forms—C.8.3
- recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2
- identify characteristics of common literary forms—C.8.3
- determine the audience and purpose for the product or presentation—B.8.7

conversation or formally in a well-organized speech or essay

- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2

A.8.3 Read and discuss literary and nonliterary texts in order to understand human experience

- Provide interpretive responses, orally and in writing, to literary and nonliterary texts representing the diversity of American cultural heritage and cultures of the world
- Identify common historical, social, and cultural themes and issues in literary works and selected passages
- Draw on a broad base of knowledge about the themes, ideas, and insights found in classical literature while reading, interpreting, and reflecting on contemporary texts
- Evaluate the themes and main ideas of a work considering its audience and purpose

C.8.2 Appreciate and derive meaning from literature and other creative expressions of information

- relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2
- identify and select materials that reflect diverse perspectives—C.8.3
- identify and select materials that reflect diverse perspectives—C.8.3
- compare and integrate new information with prior knowledge—B.8.6
- relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2
- determine the audience and purpose for the product or presentation—B.8.7

A.8.4 Read to acquire information

- Interpret and use technical resources such as charts, tables, travel schedules, timelines, and manuals
- Compare, contrast, and evaluate the relative accuracy and usefulness of information from different sources

C.8.1 Pursue information related to various dimensions of personal well-being and academic success

- identify the various organizational patterns used in different kinds of reference books—A.8.2
- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- select multiple sources that reflect differing or supporting points of view—B.8.2
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- locate indicators of authority for all sources of information—B.8.4

- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5

- Identify and explain information, main ideas, and organization found in a variety of informational passages
- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4

- Distinguish between the facts found in documents, narratives, charts, maps, tables, and other sources and the generalizations and interpretations that are drawn from them
- differentiate between primary and secondary sources--B.8.4
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- locate indicators of authority for all sources of information—B.8.4

By the end of grade 12 students will:

A.12.1 Use effective reading strategies to achieve their purposes in reading

- Apply sophisticated word meaning and word analysis strategies, such as knowledge of roots, cognates, suffixes, and prefixes, to understand unfamiliar words
- Gather information to help achieve understanding when the meaning of a text is unclear
- Apply knowledge of expository structures, such as the deductive or inductive development of an argument, to the comprehension and evaluation of texts
- Identify propaganda techniques and faulty reasoning in texts
- Explain and evaluate the influence of format on the readability and meaning of a text
- Distinguish between fact and opinion in nonfiction texts
- Consider the context of a work when determining the meaning of abbreviations and acronyms as well as the technical, idiomatic, and figurative meanings of terms

C.12.3 Develop competence and selectivity in reading, listening, and viewing

- relate prior knowledge to the problem or question—B.12.1
- conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- select information clearly related to the problem or question—B.12.4
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3
- distinguish among fact, opinion, point of view, and inference—B.12.4
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3

A.12.2 Read, interpret, and critically analyze literature

- Explain the structure of selected classical and contemporary works of literature, in whole and in part, from various cultures and historical periods, and illustrate ways in which authors use syntax, imagery, figures of speech, allusions, symbols, irony, and other devices in the context of history, culture, and style
- Draw on a broad base of knowledge about the universal themes of literature such as initiation, love and duty, heroism, illusion and reality, salvation, death and rebirth, and explain how these themes are developed in a particular work of literature
- Investigate and report on ways in which a writer has influenced or been influenced by historical, social, and cultural issues or events
- Develop, explain, and defend interpretations of complex literary works
- Explain how details of language, setting, plot, character, conflict, point of view, and voice in a work of literature combine to produce a dominant tone, effect, or theme
- Develop and apply criteria to evaluate the literary merit of unfamiliar works

C.12.3 Develop competence and selectivity in reading, listening, and viewing

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2
- recognize that core lists of classics and recommended titles for precollege reading provide for a well-rounded literary background—C.12.2
- apply personal criteria for choosing literature and other creative expressions of information—C.12.2
- compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2
- apply personal criteria for choosing literature and other creative expressions of information—C.12.2

A.12.3 Read and discuss literary and nonliterary texts in order to understand human experience

- Examine, explain, and evaluate, orally and in writing, various perspectives concerning individual, community, national, and world issues reflected in literary and nonliterary texts
- Develop and articulate, orally and in writing, defensible points of view on individual, community, national, and world issues reflected in literary and nonliterary texts
- Identify the devices an author uses to influence readers and critique the effectiveness of their use
- Identify philosophical assumptions and basic beliefs underlying selected texts

C.12.2 Appreciate and derive meaning from literature and other creative expressions of information

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3

A.12.4 Read to acquire information	C.12.1 Pursue information related to various dimensions of personal well-being and academic success
• Apply tests of logic and reasoning to informational and persuasive texts	• evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 • distinguish among fact, opinion, point of view, and inference—B.12.4 • determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
• Analyze and synthesize the concepts and details encountered in informational texts such as reports, technical manuals, historical papers, and government documents	• analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 • synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 • draw conclusions and support them with credible evidence—B.12.6
• Draw on and integrate information from multiple sources when acquiring knowledge and developing a position on a topic of interest	• identify a full range of appropriate and available information from local, national, and global sources—B.12.2 • pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 • identify and select materials that reflect diverse perspectives—C.12.3
• Evaluate the reliability and authenticity of information conveyed in a text, using criteria based on knowledge of the author, topic, and context and analysis of logic, evidence, propaganda, and language	• evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 • determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 • evaluate graphic images for misleading presentation and manipulated data—B.12.4 • determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4

B. Writing

By the end of grade 4 students will:

B.4.1 Create or produce writing to communicate with different audiences for a variety of purposes	
• Write nonfiction and technical pieces (summaries, messages, informational essays, basic directions, instructions, simple reports) that convey essential details and facts and provide accurate representations of events and sequences	• produce a document using a word processing program—A.4.3 • recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 • choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7

	• develop a product or presentation to communicate the results of the research—B.4.7
• Write expressive pieces in response to reading, viewing, and life experiences (narratives, reflections, and letters) employing descriptive detail and a personal voice	
• Write creative pieces (poetry, fiction, and plays) employing basic aesthetic principles appropriate to each genre	
• Write in a variety of situations (timed and untimed, at school and at home) and adapt strategies, such as revision and the use of reference materials, to the situation	• access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 • produce a document using a word processing program—A.4.3 • edit a word-processed document using a spell checker—A.4.3 • demonstrate the text editing features of a word processing program (e.g., bold face, italics, underline, double spacing, different size and style of fonts) to produce a finished product—A.4.3 • identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 • identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 • search for information by keyword, author, title, and topic or subject—B.4.3 • use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 • use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 • locate information from preselected Internet sites and web pages—B.4.3
• Use a variety of writing technologies, including pen and paper as well as computers	• develop touch keyboarding techniques using both hands—A.4.1 • identify and define basic word processing terminology (e.g., cursor, open, save, file, I-beam, window, document, cut, copy, paste)—A.4.3 • produce a document using a word processing program—A.4.3 • edit a word-processed document using a spell checker—A.4.3 • demonstrate the text editing features of a word processing program (e.g., bold face, italics, underline, double spacing, different size and style of fonts) to produce a finished product—A.4.3 • explore special formatting features (e.g., borders, shading, centering, justification) of a word processing program—A.4.3
• Write for a variety of readers, including peers, teachers, and other adults, adapting content, style, and structure to audience and situation	• produce a document using a word processing program—A.4.3 • edit a word-processed document using a spell checker—A.4.3

- demonstrate the text editing features of a word processing program (e.g., bold face, italics, underline, double spacing, different size and style of fonts) to produce a finished product—A.4.3
- explore special formatting features (e.g., borders, shading, centering, justification) of a word processing program—A.4.3
- identify the audience for the product or presentation—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7
- recognize that reports or articles they write must be put in their own words—D.4.3

B.4.2 Plan, revise, edit, and publish clear and effective writing

- Produce multiple drafts, including finished pieces, that demonstrate the capacity to generate, focus, and organize ideas and to revise the language, organization, and content of successive drafts in order to fulfill a specific purpose for communicating with a specific audience
- Explain the extent and reasons for revision in conference with a teacher
- Given a writing assignment to be completed in a limited amount of time, produce a well developed, well organized, and effective response in correct English and an appropriate voice

A.4.3 Use a computer and productivity software to organize and create information

- produce a document using a word processing program—A.4.3
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- identify the audience for the product or presentation—B.4.7
- establish goals and determine steps for completing a project—C.4.4
- assess progress and quality of work—C.4.4

B.4.3 Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in written communications

- Understand and use parts of speech effectively, including nouns, pronouns, and adjectives
- Use adverbials effectively, including words and phrases
- Employ principles of agreement related to number, gender, and case
- Capitalize proper nouns, titles, and initial words of sentences
- Use punctuation marks and conjunctions, as appropriate, to separate sentences and connect independent clauses

- Use commas correctly to punctuate appositives and lists
- Spell frequently used words correctly
- Use word order and punctuation marks to distinguish statements, questions, exclamations, and commands

- edit a word-processed document using a spell checker—A.4.3

By the end of grade 8 students will:

B.8.1 Create or produce writing to communicate with different audiences for a variety of purposes

- Write a coherent and complete expository piece, with sufficient detail to fulfill its purpose, sufficient evidence to support its assertions, language appropriate for its intended audience, and organization achieved through clear coordination and subordination of ideas
- Write a persuasive piece (such as a letter to a specific person or a script promoting a particular product) that includes a clear position, a discernible tone, and a coherent argument with reliable evidence
- Write a narrative based on experience that uses descriptive language and detail effectively, presents a sequence of events, and reveals a theme
- Write clear and pertinent responses to verbal or visual material that communicate, explain, and interpret the reading or viewing experience to a specific audience
- Write creative fiction that includes major and minor characters, a coherent plot, effective imagery, descriptive language, and concrete detail
- Write in a variety of situations (during an exam, in a computer lab) and adapt strategies, such as revision, technology, and the use of reference materials, to the situation

- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- locate indicators of authority for all sources of information—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4

- locate indicators of authority for all sources of information—B.8.4

- Use a variety of writing technologies including pen and paper as well as computers

- demonstrate touch keyboarding skills at acceptable speed and accuracy levels (suggested range 20-25 wpm)—A.8.1
- explain the use of basic word processing functions (e.g., menu, tool bars, dialog boxes, radio buttons, spell checker, thesaurus, page layout, headers and footers, word count, tabs)—A.8.3
- use the spell checker and thesaurus functions of a word processing program—A.8.3
- move textual and graphics data from one document to another—A.8.3
- use graphics software to import pictures, images, and charts into documents—A.8.3
- use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3
- compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
- send an e-mail message with an attachment to several persons simultaneously—A.8.4
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5

- Write for a variety of readers, including peers, teachers, and other adults, adapting content, style, and structure to audience and situation

- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- determine the audience and purpose for the product or presentation—B.8.7

B.8.2 Plan, revise, edit, and publish clear and effective writing

- Produce multiple drafts, including finished pieces, that demonstrate the capacity to generate, focus, and organize ideas and to revise the language, organization, content, and tone of successive drafts in order to fulfill a specific purpose for communicating with a specific audience

A.8.3 Use a computer and productivity software to organize and create information

- use graphics software to import pictures, images, and charts into documents—A.8.3
- use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3
- compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5

	• organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 • determine the audience and purpose for the product or presentation—B.8.7
• Identify questions and strategies for improving drafts in writing conferences with a teacher	
• Given a writing assignment to be completed in a limited amount of time, produce a well developed, well organized, and effective response in correct English and an appropriate voice	• evaluate progress and quality of personal learning—C.8.4

B.8.3 Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in written communications

• Understand the function of words, phrases, and clauses in a sentence and use them effectively, including coordinate and subordinate conjunctions, relative pronouns, and comparative adjectives	• use the spell checker and thesaurus functions of a word processing program—A.8.3
• Use correct tenses to indicate the relative order of events	
• Understand and employ principles of agreement, including subject-verb, pronoun-noun, and preposition-pronoun	
• Punctuate compound, complex, and compound-complex sentences correctly	
• Employ the conventions of capitalization	
• Spell frequently used words correctly and use effective strategies for spelling unfamiliar words	• use the spell checker and thesaurus functions of a word processing program—A.8.3

By the end of grade 12 students will:

B.12.1 Create or produce writing to communicate with different audiences for a variety of purposes

• Write a coherent argument that takes a position, accurately summarizes an opposing position, refutes that position, and cites persuasive evidence	• use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 • interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 • draw conclusions and support them with credible evidence—B.12.6
• Compose and publish analytic and reflective writing that conveys knowledge, experience, insights, and opinions to an intended audience	• analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

	• determine the audience and purpose for communicating the information—B.12.7
• Use rhetorical structures that divide complex thoughts into simpler ones, logical transitions from one thought to another, and language appropriate to the intended audience	• determine the audience and purpose for communicating the information—B.12.7
• Write creative fiction that includes an authentic setting, discernible tone, coherent plot, distinct characters, effective detail, believable dialogue, and reasonable resolution of conflict	
• Write summaries of complex information (such as information in a lengthy text or a sequence of events), expand or reduce the summaries by adding or deleting detail, and integrate appropriately summarized information into reviews, reports, or essays, with correct citations	• use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 • follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 • credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 • analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 • compile a bibliography in a format stipulated by an accepted manual of style—B.12.5 • interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 • synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 • draw conclusions and support them with credible evidence—B.12.6
• Write autobiographical and biographical narratives in a mature style characterized by suitable vocabulary, descriptive detail, effective syntax, an appropriate voice, a variety of sentence structures, clear coordination and subordination of ideas, and rhetorical devices that help establish tone and reinforce meaning	• proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
• Prepare and publish technical writing such as memos, applications, letters, reports and resumes for various audiences, attending to details of layout and format as appropriate to purpose	• use an integrated program or applications suite to complete a class assignment—A.12.3 • proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3 • manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3 • use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3 • analyze data from a database and present conclusions in a document or report—A.12.3

	• organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
	• compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
	• determine the audience and purpose for communicating the information—B.12.7
• Write in a variety of situations (impromptu, over time, in collaboration, alone) and adapt strategies, such as revision, technology, and the use of reference materials, to the situation	• use an integrated program or applications suite to complete a class assignment—A.12.3
	• use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
	• use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3
	• use different search strategies for bibliographic citations, abstracts, and full-text resources in electronic formats—B.12.3
	• construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
	• determine when to use general or specialized print and electronic reference tools—B.12.3
	• compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
	• make decisions about group and classroom projects and learning objectives—C.12.4
	• collaborate with others to design and develop information products and solutions—D.12.1
• Use a variety of writing technologies, including pen and paper as well as computers	• demonstrate proper keyboarding mechanics and touch type accurately (suggested range 30-35 wpm)—A.12.1
	• use an integrated program or applications suite to complete a class assignment—A.12.3
	• proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
	• manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3
	• use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
	• analyze data from a database and present conclusions in a document or report—A.12.3
	• produce a multimedia program using text, graphics, moving images, and sound—A.12.5
	• develop a document or file for inclusion into a website or web page—A.12.5
• Write for a variety of readers, including peers, teachers, and other adults, adapting content, style, and structure to audience and situation	• determine the audience and purpose for communicating the information—B.12.7

B.12.2 Plan, revise, edit, and publish clear and effective writing

- Write essays demonstrating the capacity to communicate knowledge, opinions, and insights to an intended audience through a clear thesis and effective organization of supporting ideas
- Develop a composition through a series of drafts, using a revision strategy based on purpose and audience, personal style, self-awareness of strengths and weaknesses as a writer, and feedback from peers and teachers
- Given a writing assignment to be completed in a limited amount of time, produce a well developed, well organized, clearly written response in effective language and a voice appropriate for audience and purpose

A.12.3 Use a computer and productivity software to organize and create information

- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- draw conclusions and support them with credible evidence—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- use an integrated program or applications suite to complete a class assignment—A.12.3
- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
- determine the audience and purpose for communicating the information—B.12.7
- collaborate with others to design and develop information products and solutions—D.12.1
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- determine the audience and purpose for communicating the information—B.12.7
- evaluate progress and quality of personal learning—C.12.4

B.12.3 Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in written communications

- Understand the form and function of words, phrases, and clauses, including inter-related clauses in complex sentences, and use them effectively
- Use correct tenses, including conditionals, to indicate the relative order and relationship of events
- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
- Employ principles of agreement, including subject-verb, pronoun-noun, and preposition-pronoun
- Punctuate compound, complex, and compound-complex sentences correctly, including appropriate use of dialogue, citations, colons, hyphens, dashes, ellipses, and italics
- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
- Employ the conventions of capitalization

- Spell frequently used words correctly and use effective strategies for spelling unfamiliar words
- Recognize common errors in the use of language and know how (and when) to correct them

- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3

C. Oral Language

By the end of grade 4 students will:

C.4.1 Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes

- Identify and discuss criteria for effective oral presentations, including such factors as eye contact, projection, tone, volume, rate, and articulation
- Read aloud effectively from previously-read material
- Speaking from notes or a brief outline, communicate precise information and accurate instructions in clearly organized and sequenced detail
- Present autobiographical or fictional stories that recount events effectively to large and small audiences
- Participate in group readings, such as choral, echo, and shadow reading
- Perform dramatic readings and presentations
- Distinguish between fact and opinion and provide evidence to support opinions

- review the criteria to be used in judging both the product (or presentation) and the process—B.4.8
- review the process based on the criteria—B.4.8
- develop a product or presentation to communicate the results of the research—B.4.7
- contribute to group or classroom decisions about learning objectives—C.4.4
- distinguish between fact and opinion—B.4.4
- apply the information gathered to solve the information problem or question—B.4.6

C.4.2 Listen to and comprehend oral communications

- Follow basic directions
- Identify and summarize key points of a story or discussion
- Retell stories and reports of events in proper sequence
- Follow sequence in plot and character development, predict outcomes, and draw conclusions
- Recall the content of stories after hearing them, relate the content to prior knowledge, and answer various types of factual and interpretive questions about the stories
- Distinguish fact from fantasy and fact from opinion

- identify new information and integrate it with prior knowledge—B.4.6
- differentiate between fiction and nonfiction resources—B.4.4
- distinguish between fact and opinion—B.4.4

C.4.3 Develop competence and selectivity in reading, listening, and viewing

- Understand increasingly complex sentence structures
- Understand a variety of word structures and forms, such as affixes, roots, homonyms, antonyms, synonyms, and word analogies

C.4.3 Participate effectively in discussion

- Volunteer relevant information, ask relevant questions, and answer questions directly
- Use appropriate eye contact and other nonverbal cues
- Use appropriate strategies to keep a discussion going
- Reflect on the ideas and opinions of others and respond thoughtfully
- Ask for clarification and explanation of unfamiliar words and ideas
- Summarize information conveyed through discussion

D.4.1 Participate productively in workgroups or other collaborative learning environments

- share information and ideas with others—D.4.1

- share information and ideas with others—D.4.1
- respect the ideas of others—D.4.1
- acknowledge the right of classmates to express opinions different from their own—D.4.4

By the end of grade 8 students will:

C.8.1 Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes

- Share brief impromptu remarks about topics of interest to oneself and others
- Speaking from notes or an outline, relate an experience in descriptive detail, with a sense of timing and decorum appropriate to the occasion
- Perform expressive oral readings of prose, poetry, and drama
- Present a coherent, comprehensive report on differing viewpoints on an issue, evaluating the content of the material presented, and organizing the presentation in a manner appropriate to the audience
- Differentiate between formal and informal contexts and employ an appropriate style of speaking, adjusting language, gestures, rate, and volume according to audience and purpose

- identify topics of interest and seek relevant information about them—C.8.1

- select multiple sources that reflect differing or supporting points of view—B.8.2
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- determine the audience and purpose for the product or presentation—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- determine the audience and purpose for the product or presentation—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- Observe the appropriate etiquette when expressing thanks and receiving praise

C.8.2 Listen to and comprehend oral communications

- Summarize and explain the information conveyed in an oral communication, accounting for the key ideas, structure, and relationship of parts to the whole
- Distinguish among purposes for listening, such as gaining information or being entertained, and take notes as appropriate
- Recall significant details and sequence accurately
- Follow a speaker's argument and represent it in notes
- Evaluate the reliability of information in a communication, using criteria based on prior knowledge of the speaker, the topic, and the context and on analysis of logic, evidence, propaganda devices, and language

C.8.3 Develop competence and selectivity in reading, listening, and viewing

- identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- locate indicators of authority for all sources of information—B.8.4

C.8.3 Participate effectively in discussion

- Participate in discussion by listening attentively, demonstrating respect for the opinions of others, and responding responsibly and courteously to the remarks of others
- Explain and advance opinions by citing evidence and referring to sources
- Evaluate the stated ideas and opinions of others, seeking clarification through questions
- Invite ideas and opinions of others into the discussion, responding clearly and tactfully to questions and comments
- Accept and use helpful criticism
- Establish and maintain an open mind when listening to others' ideas and opinions

D.8.1 Participate productively in workgroups or other collaborative learning environments

- participate in decisions about group and classroom projects and learning objectives—C.8.4
- collaborate with others to identify information needs and seek solutions—D.8.1
- demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1
- locate indicators of authority for all sources of information—B.8.4
- record sources of information in a standardized bibliographic format—B.8.5
- cite the source for words which are quoted verbatim and for pictures, graphics, and audio or video segments which are used in a product or presentation—D.8.3
- collaborate with others to identify information needs and seek solutions—D.8.1
- demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1

• Summarize the main points of a discussion, orally and in writing, specifying areas of agreement and disagreement and paraphrasing contributions	
• Display and maintain facial expressions, body language, and other response cues that indicate respect for the speaker and attention to the discussion	
• Attend to the content of discussion rather than the speaker	
• Participate in discussion without dominating	• collaborate with others to identify information needs and seek solutions—D.8.1
• Distinguish between supported and unsupported statements	• select multiple sources that reflect differing or supporting points of view—B.8.2 • distinguish between fact and opinion; recognize point of view or bias—B.8.4 • locate indicators of authority for all sources of information—B.8.4

By the end of grade 12 students will:

C.12.1 Prepare and deliver formal oral presentations appropriate to specific purposes and audiences	
• Develop and deliver a speech that conveys information and ideas in logical fashion for a selected audience, using language that clarifies and reinforces meaning	• organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 • determine the audience and purpose for communicating the information—B.12.7 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
• Construct and present a coherent argument, summarizing then refuting opposing positions, and citing persuasive evidence	• select information clearly related to the problem or question—B.12.4 • evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 • distinguish among fact, opinion, point of view, and inference—B.12.4 • determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 • determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4 • synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 • draw conclusions and support them with credible evidence—B.12.6
• Participate effectively in question-and-answer sessions following presentations	
• Summarize narrative and numerical information accurately and logically in presentations	• use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5

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	• synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
• Demonstrate confidence and poise during presentations, interacting effectively with the audience, and selecting language and gestures mindful of their effect	• determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6 • judge how well the production or presentation meets specified criteria—A.12.6 • specify ways to improve future productions or presentations—A.12.6 • determine the audience and purpose for communicating the information—B.12.7
• Demonstrate the ability to debate an issue from either side	
• Interpret literary works orally, citing textual data in support of assertions	• compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2
• Synthesize and present results of research projects, accurately summarizing and illustrating the main ideas, using appropriate technological aids, and offering support for the conclusions	• evaluate the appropriateness and effectiveness of the media and technology used—A.12.6 • determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6 • judge how well the production or presentation meets specified criteria—A.12.6 • specify ways to improve future productions or presentations—A.12.6 • organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 • interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 • synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 • draw conclusions and support them with credible evidence—B.12.6 • compare strengths and weaknesses of possible presentation methods and products—B.12.7 • select the most appropriate format for the product or presentation—B.12.7 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
• Speak fluently with varied inflection and effective eye contact, enunciating clearly at an appropriate rate and volume • Observe the appropriate etiquette when expressing thanks and receiving praise	

C.12.2 Listen to, discuss, and comprehend oral communications

- Attend to both literal and connotative meanings
- Distinguish between relevant and irrelevant information
- Distinguish fact from opinion, evaluate logic, and identify manipulative techniques
- Analyze messages for their accuracy and usefulness
- Evaluate a speaker's use of diction, tone, syntax, rhetorical structure, and conventions of language considering the purpose and context of the communication
- Relate a speaker's ideas and information to prior knowledge and experience
- Consider the specific situation and current conditions when responding to instructions

C.12.3 Develop competence and selectivity in reading, listening, and viewing

- select information clearly related to the problem or question—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

C.12.3 Participate effectively in discussion

- Detect and evaluate a speaker's bias
- Consider the ideas and opinions of other speakers thoughtfully before responding
- Evaluate the validity and adequacy of ideas, arguments, hypotheses, and evidence

D.12.1 Participate productively in workgroups or other collaborative learning environments

- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6

- Be aware of and try to control counterproductive emotional responses to a speaker or ideas conveyed in a discussion
- Appraise the purpose of discussions by examining their context and the motivation of participants
- Perform various roles in a discussion, including leader, participant, and moderator
- Demonstrate the ability to extend a discussion by adding relevant information or asking pertinent questions
- Explain and advance opinions by citing evidence and referring to authoritative sources
- Employ strategies such as summarizing main ideas or identifying areas of agreement to solve problems, resolve conflicts, and conclude discussions
- Convey criticism in a respectful and supportive way

- incorporate effective group processes and shared decision-making in project development—D.12.1
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

D. Language

By the end of grade 4 students will:

D.4.1 Develop their vocabulary and ability to use words, phrases, idioms, and various grammatical structures as a means of improving communication

- Consult dictionaries, thesauruses, and other resources to find and compare definitions, choose among synonyms, and spell words correctly
- Use their knowledge of roots, prefixes, and suffixes to interpret and convey the meaning of words
- Identify common figures of speech and use them appropriately

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- edit a word-processed document using a spell checker—A.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3

D.4.2 Recognize and interpret various uses and adaptations of language in social, cultural, regional, and professional situations, and learn to be flexible and responsive in their use of English

- Identify various styles and purposes of oral and written language and learn to communicate effectively in commonly occurring situations
- Describe and give examples of variations in American English that appear in different social, cultural, regional, and professional environments

- identify materials that reflect diverse perspectives—C.4.3

By the end of grade 8 students will:

D.8.1 Develop their vocabulary and ability to use words, phrases, idioms, and various grammatical structures as a means of improving communication

- Consult dictionaries, thesauruses, handbooks, and grammar texts when choosing words, phrases, and expressions for use in oral and written presentations

- identify the various organizational patterns used in different kinds of reference books—A.8.2
- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- use the spell checker and thesaurus functions of a word processing program—A.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3

- Explain how writers and speakers choose words and use figurative language such as similes, metaphors, personification, hyperbole, and allusion to achieve specific effects
- Choose words purposefully and evaluate the use of words in communications designed to inform, explain, and persuade

- identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
- recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3

D.8.2 Recognize and interpret various uses and adaptations of language in social, cultural, regional, and professional situations, and learn to be flexible and responsive in their use of English

- Describe how American English is used in various public and private contexts, such as school, home, and work
- Make appropriate choices when speaking and writing, such as formal or informal language, considering the purpose and context of the communication

- determine the purpose of a specific production or presentation—A.8.6
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- Evaluate how audience and context affect the selection and use of words and phrases, including technical terms, slang, and jargon

- determine the audience and purpose for the product or presentation—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

By the end of grade 12 students will:

D.12.1 Develop their vocabulary and ability to use words, phrases, idioms, and various grammatical structures as a means of improving communication

- Examine the origin, history, denotation, connotation, and usage of English words and phrases by consulting dictionaries, thesauruses, handbooks, and other sources of information about the language

- use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3
- determine when to use general or specialized print and electronic reference tools—B.12.3

- Evaluate the effects of different types of language, such as literary and technical, formal and informal, in communications designed to narrate, inform, explain, persuade, and entertain
- Use language appropriate to the background, knowledge, and age of an audience
- Recognize and exercise options in modes of expression and choice of words when speaking and writing, especially when revising written work

- determine the audience and purpose for communicating the information—B.12.7
- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
- manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3
- use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- develop a document or file for inclusion into a website or web page—A.12.5

D.12.2 Recognize and interpret various uses and adaptations of language in social, cultural, regional, and professional situations, and learn to be flexible and responsive in their use of English

- Evaluate the use of standard American English in public contexts, such as school and work

- Evaluate the choice of words, expressions, and style considering the purpose and context of a communication
- Analyze and explain how immediate context and broader social, cultural, regional, and professional variables influence the use of language, citing characteristics such as level of formality, slang, jargon, and emotional impact
- Draw inferences about values, attitudes, and points of view by analyzing a writer's or speaker's use of English
- Compare form, meaning, and value of different symbol systems, such as alphabets, signs, symbols and of expressions commonly used in another language

- assess the purpose and effectiveness of a production or presentation—A.12.6
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3
- contrast characteristics of common literary forms—C.12.3
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3

E. Media and Technology

By the end of grade 4 students will:

E.4.1 Use computers to acquire, organize, analyze, and communicate information

- Operate common computer hardware and software

A. Media and Technology

A.4.1 Use common media and technology terminology and equipment

A.4.2 Identify and use common media formats

A.4.3 Use a computer and productivity software to organize and create information

A.4.4 Use a computer and communications software to access and transmit information

A.4.5 Use media and technology to create and present information

- demonstrate proper care and correct use of media and equipment—A.4.1
- demonstrate the correct use of input devices (e.g., mouse, keyboard) and output devices (e.g., monitor, printer, speakers)—A.4.1
- develop touch keyboarding techniques using both hands—A.4.1
- save and backup files on a computer hard drive, storage medium, or server—A.4.1
- demonstrate how to open and run a software program from a local storage device or network server—A.4.2

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	• create, save, move, copy, retrieve, and delete electronic files—A.4.2
	• use a prepared database template to enter and edit data, and to locate records—A.4.3
	• use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
	• create and present a short video or hypermedia program—A.4.5
• Use basic word-processing, graphics, and drawing programs	• incorporate graphics, pictures, and sound into another document—A.4.2
	• produce a document using a word processing program—A.4.3
	• edit a word-processed document using a spell checker—A.4.3
	• demonstrate the text editing features of a word processing program (e.g., bold face, italics, underline, double spacing, different size and style of fonts) to produce a finished product—A.4.3
	• explore special formatting features (e.g., borders, shading, centering, justification) of a word processing program—A.4.3
	• use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
• Create, store, and retrieve electronic files	• save and backup files on a computer hard drive, storage medium, or server—A.4.1
	• create, save, move, copy, retrieve, and delete electronic files—A.4.2
	• generate, send, retrieve, save, and organize electronic messages—A.4.4
• Access information using electronic reference resources, such as library catalogs, encyclopedias, almanacs, and indexes	• access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
	• log on and view information from preselected sites on the Internet—A.4.4
	• use the functions of a web browser to navigate and save World Wide Web sites—A.4.4
	• identify and use simple search engines and directories—A.4.4
	• identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
	• search for information by keyword, author, title, and topic or subject—B.4.3
	• use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
	• use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
	• locate information from preselected Internet sites and web pages—B.4.3

• Generate, send, and retrieve electronic messages	• generate, send, retrieve, save, and organize electronic messages—A.4.4
E.4.2 Make informed judgments about media and products	
• Identify the intent or appeal behind products and messages promoted via media	• recognize that graphics and images can be used to convey a message—B.4.4 • recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3
• Recognize basic propaganda techniques	• recognize that graphics and images can be used to convey a message--B.4.4 • identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
• Identify images and symbols central to particular messages	• recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3
E.4.3 Create media products appropriate to audience and purpose	**A.4.5 Use media and technology to create and present information**
• Write news articles appropriate for familiar media • Create simple advertising messages and graphics appropriate for familiar media	• incorporate graphics, pictures, and sound into another document—A.4.2 • use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
• Prepare, perform, and tape simple radio and television scripts	• demonstrate proper care and correct use of media and equipment—A.4.1 • demonstrate the use of still and video cameras and scanners—A.4.1 • plan a multimedia production using an outline or storyboard—A.4.5 • create and present a short video or hypermedia program—A.4.5 • identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
E.4.4 Demonstrate a working knowledge of media production and distribution	**A.4.1 Use common media and technology terminology and equipment** **A.4.5 Use media and technology to create and present information**
• Make distinctions between messages presented on radio, television, and in print	• identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2 • identify the media and technology used—A.4.6 • explain how well the media and technology contributed to its impact—A.4.6

- Recognize how messages are adjusted for different audiences
- Identify sales approaches and techniques aimed at children

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- identify the audience for the product or presentation—B.4.7

E.4.5 Analyze and edit media work as appropriate to audience and purpose

- Generate and edit media work as appropriate to audience and purpose, sequencing the presentation effectively and adding or deleting information as necessary to achieve desired effects

- Provide feedback to (and receive it from) peers about the content, organization, and overall effect of media work

A.4.6 Evaluate the use of media and technology in a production or presentation

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
- plan a multimedia production using an outline or storyboard—A.4.5
- create and present a short video or hypermedia program—A.4.5
- identify the audience for the product or presentation—B.4.7
- identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- identify the media and technology used—A.4.6
- explain how well the media and technology contributed to its impact—A.4.6
- identify simple criteria for judging the quality of a production or presentation—A.4.6
- judge how well a particular production meets the identified criteria—A.4.6
- suggest ways to improve future productions or presentations—A.4.6
- review the criteria to be used in judging both the product (or presentation) and the process—B.4.8
- determine how well the product or presentation meets the original information need based on the criteria—B.4.8
- review the process based on the criteria—B.4.8
- suggest ways in which the process and product can be improved—B.4.8
- contribute to group or classroom decisions about learning objectives—C.4.4
- share information and ideas with others—D.4.1
- review workgroup projects and suggest improvements—D.4.1

By the end of grade 8 students will:

E.8.1 Use computers to acquire, organize, analyze, and communicate information	A.8.1 Use common media and technology terminology and equipment A.8.2 Identify and use common media formats A.8.3 Use a computer and productivity software to organize and create information A.8.4 Use a computer and communications software to access and transmit information A.8.5 Use media and technology to create and present information
• Demonstrate efficient word-processing skills	• demonstrate touch keyboarding skills at acceptable speed and accuracy levels (suggested range 20-25 wpm)—A.8.1 • use the spell checker and thesaurus functions of a word processing program—A.8.3 • move textual and graphics data from one document to another—A.8.3 • use graphics software to import pictures, images, and charts into documents—A.8.3 • use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3 • compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3
• Construct and use simple databases	• classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3 • incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 • use an on-line catalog and other databases of print and electronic resources—B.8.3 • recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3 • search for information by subject, author, title, and keyword—B.8.3
• Use manuals and on-screen help in connection with computer applications	• identify and define computer and networking terms (e.g., modem, file server, client station, LAN, Internet/Intranet, data storage device)—A.8.1 • recognize and solve routine computer hardware and software problems—A.8.1 • describe the operating and file management software of a computer (e.g., desktop, file, window, folder, directory, pull-down menu, dialog box)—A.8.2

	• explain the use of basic word processing functions (e.g., menu, tool bars, dialog boxes, radio buttons, spell checker, thesaurus, page layout, headers and footers, word count, tabs)—A.8.3
• Perform basic computer operations on various platforms	• demonstrate the correct operation of a computer system on a network—A.8.1
	• organize and backup files on a computer disk, drive, server, or other storage device—A.8.1
	• capture, edit, and combine video segments using a multimedia computer with editing software or a video editing system—A.8.1
• Collect information from various on-line sources, such as web pages, news groups, and listservs	• access information using a modem or network connection to the Internet or other on-line information services—A.8.4
	• view, print, save, and open a document from the Internet or other on-line sources—A.8.4
	• use basic search engines and directories to locate resources on a specific topic—A.8.4
	• demonstrate efficient Internet navigation—A.8.4
	• organize World Wide Web bookmarks by subject or topic—A.8.4
	• use an on-line catalog and other databases of print and electronic resources—B.8.3
	• search for information by subject, author, title, and keyword—B.8.3
	• use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3
	• use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
	• use a search engine to locate appropriate Internet or Intranet resources—B.8.3

E.8.2 Make informed judgments about media and products

• Recognize common structural features found in print and broadcast advertising	• recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
• Identify and explain the use of stereotypes and biases evident in various media	• evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
	• distinguish between fact and opinion; recognize point of view or bias—B.8.4
• Compare the effect of particular symbols and images seen in various media	• recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
• Develop criteria for selecting or avoiding specific broadcast programs and periodicals	• identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2

E.8.3 Create media products appropriate to audience and purpose

- Write informational articles that target audiences of a variety of publications
- Use desktop publishing to produce products such as brochures and newsletters designed for particular organizations and audiences
- Create videotapes and audiotapes designed for particular audiences

A.8.5 Use media and technology to create and present information

- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- determine the audience and purpose for the product or presentation—B.8.7
- compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3
- capture, edit, and combine video segments using a multimedia computer with editing software or a video editing system—A.8.1
- design and produce a multimedia program—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

E.8.4 Demonstrate a working knowledge of media production and distribution

- Plan a promotion or campaign that involves broadcast and print media production and distribution

A.8.1 Use common media and technology terminology and equipment

A.8.5 Use media and technology to create and present information

- move textual and graphics data from one document to another—A.8.3
- use graphics software to import pictures, images, and charts into documents—A.8.3
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- design and produce a multimedia program—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- develop an original product or presentation which addresses the information problem or question—B.8.7

- Analyze how messages may be affected by financial factors such as sponsorship
- Identify advertising strategies and techniques aimed at teenagers

E.8.5 Analyze and edit media work as appropriate to audience and purpose

- Revise media productions by adding, deleting, and adjusting the sequence and arrangement of information, images, or other content as necessary to improve focus, clarity, or effect

- Develop criteria for comprehensive feedback on the quality of media work and use it during production

A.8.6 Evaluate the use of media and technology in a production or presentation

- capture, edit, and combine video segments using a multimedia computer with editing software or a video editing system—A.8.1
- use a graphics program to create or modify detail to an image or picture—A.8.2
- describe the effectiveness of the media and technology used in a production or presentation—A.8.6
- identify criteria for judging the technical quality of a production or presentation—A.8.6
- judge how well the production or presentation meets identified criteria—A.8.6
- recommend ways to improve future productions or presentations—A.8.6

By the end of grade 12 students will:

E.12.1 Use computers to acquire, organize, analyze, and communicate information

- Design, format, and produce attractive word-processed documents for various purposes.

A.12.1 Use common media and technology terminology and equipment

A.12.2 Identify and use common media formats

A.12.3 Use a computer and productivity software to organize and create information

A.12.4 Use a computer and communications software to access and transmit information

A.12.5 Use media and technology to create and present information

- demonstrate proper keyboarding mechanics and touch type accurately (suggested range 30-35 wpm)—A.12.1
- use an integrated program or applications suite to complete a class assignment—A.12.3
- proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3
- manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3

	• use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
• Incorporate information from databases and spreadsheets into reports	• analyze data from a database and present conclusions in a document or report—A.12.3
	• construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
• Integrate graphics appropriately into reports, newsletters, and other documents	• demonstrate how to import and export text, graphic, and sound files—A.12.2
	• manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3
	• use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
	• use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
• Retrieve and reproduce documents across various platforms	• demonstrate how to import and export text, graphic, and sound files—A.12.2
	• manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3
	• use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
• Use on-line sources to exchange information	• choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4
	• distinguish between "pull" and "push" or "broadcast" methods of acquiring information from an on-line source—A.12.4
	• employ FTP (file transfer protocol) to retrieve and download computer files from a remote computer—A.12.4
	• use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4
	• establish access to primary sources and other experts for class reports or projects—A.12.4
	• participate in an on-line discussion group or listserv appropriate to a content area—A.12.4
	• gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
	• locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
	• use increasingly complex organizational features of print and electronic resources such as cumulative and cross-databases and indexes—B.12.3

	• construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 • determine when to use general or specialized print and electronic reference tools—B.12.3 • compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
E.12.2 Make informed judgments about media and products	
• Develop and apply evaluative criteria of accuracy and point of view to broadcast news programs	• distinguish among fact, opinion, point of view, and inference—B.12.4 • determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 • evaluate graphic images for misleading presentation and manipulated data—B.12.4 • evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3
• Recognize and explain the impact of various media on daily life	
• Analyze the content and effect of subtle persuasive techniques used on-line and in broadcast and print media	• evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 • distinguish among fact, opinion, point of view, and inference—B.12.4 • determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 • evaluate graphic images for misleading presentation and manipulated data—B.12.4 • evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3
• Develop and apply criteria for evaluating broadcast programming	• assess the purpose and effectiveness of a production or presentation—A.12.6 • evaluate the appropriateness and effectiveness of the media and technology used—A.12.6 • determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6 • judge how well the production or presentation meets specified criteria—A.12.6 • specify ways to improve future productions or presentations—A.12.6
E.12.3 Create media products appropriate to audience and purpose	**A.12.5 Use media and technology to create and present information**
• Create multimedia presentations in connection with major projects, such as research reports or exhibitions	• produce a multimedia program using text, graphics, moving images, and sound—A.12.5

- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

- Develop various media products to inform or entertain others in school or the community, such as slide shows, videos, newspapers, sound recordings, literary publications, and brochures

- use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
- produce a multimedia program using text, graphics, moving images, and sound—A.12.5
- develop a document or file for inclusion into a website or web page—A.12.5
- participate in a desktop conferencing session to present and share information with others—A.12.5
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

E.12.4 Demonstrate a working knowledge of media production and distribution

A.12.1 Use common media and technology terminology and equipment

A.12.5 Use media and technology to create and present information

- Analyze the effect of media production techniques, such as music, camera angles, fade-outs, and lighting, on different audiences

- determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6
- judge how well the production or presentation meets specified criteria—A.12.6
- specify ways to improve future productions or presentations—A.12.6

- Identify the impact of image and context on particular audiences receiving the same message

- assess the purpose and effectiveness of a production or presentation—A.12.6
- determine the audience and purpose for communicating the information—B.12.7
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3

- Develop and apply criteria for evaluating advertising campaigns for a variety of products, past and present

E.12.5 Analyze and edit media work as appropriate to audience and purpose

- Develop and present criteria for evaluating a variety of media products
- Evaluate audience feedback on the clarity, form, effectiveness, technical achievement and aesthetic appeal of media work

A.12.6 Evaluate the use of media and technology in a production or presentation

- determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6
- judge how well the production or presentation meets specified criteria—A.12.6
- specify ways to improve future productions or presentations—A.12.6
- establish the criteria to be used in judging both the product (or presentation) and the process—B.12.8
- evaluate the appropriateness and effectiveness of the media and technology used—A.12.6
- determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6

F. Research and Inquiry

B. Information and Inquiry

By the end of grade 4 students will:

F.4.1 Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings

- Propose research by formulating initial questions, narrowing the focus of a topic, identifying prior knowledge, and developing a basic plan for gathering information

B.4.1 Define the need for information

B.4.2 Develop information seeking strategies

B.4.3 Locate and access information sources

B.4.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

B.4.5 Record and organize information

B.4.6 Interpret and use information to solve the problem or answer the question

B.4.7 Communicate the results of research and inquiry in an appropriate format

B.4.8 Evaluate the information product and process

- identify the information problem or question to be resolved—B.4.1
- determine what is already known about the information problem or question—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1

	• determine a specific focus for the information search questions—B.4.1
	• list steps to follow in carrying out the information search—B.4.2
• Conduct research by identifying, locating, exploring, and effectively using multiple sources of information appropriate to the inquiry, including print, nonprint, and electronic sources	• identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2
	• access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
	• log on and view information from preselected sites on the Internet—A.4.4
	• identify and use simple search engines and directories—A.4.4
	• identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
	• evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
	• select more than one resource when appropriate—B.4.2
	• recognize that materials in the school library media center are organized in a systematic manner—B.4.3
	• locate materials using the classification system of the school library media center—B.4.3
	• identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
	• search for information by keyword, author, title, and topic or subject—B.4.3
	• use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
	• use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
	• locate information from preselected Internet sites and web pages—B.4.3
	• preview selected resources using table of contents, index, and other simple scanning strategies—B.4.4
	• identify topics suitable for independent learning or in-depth exploration—C.4.4
	• demonstrate use of the Internet and other on-line sources consistent with the school's acceptable use policy—D.4.2
• Recognize, record, organize, and acknowledge information pertinent to a project, accurately blending discoveries into answers	• identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
	• evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
	• identify the sponsoring organization or author for all resources—B.4.4
	• take notes or record information in their own words—B.4.5

- record the sources of information as notes are taken—B.4.5
- recognize the need to identify the author of any information copied verbatim—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- list basic bibliographic sources for information used—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6
- differentiate between copying and summarizing—D.4.2
- describe how copyright protects the right of an author or producer to control the distribution, performance, display, or copying of original works—D.4.3
- identify violations of the copyright law as a crime for which there are serious consequences—D.4.3
- explain why the use of all or parts of another person's work requires prior permission or citation—D.4.3
- recognize that a quoted work must be stated in the author's exact words—D.4.3
- list sources quoted verbatim and visuals used in a presentation—D.4.3
- recognize that reports or articles they write must be put in their own words—D.4.3

• Present the results of inquiry, reporting and commenting on the substance and process of learning, orally and in writing, using appropriate visual aids

- incorporate graphics, pictures, and sound into another document—A.4.2
- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
- apply the information gathered to solve the information problem or question—B.4.6
- identify the audience for the product or presentation—B.4.7
- identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

By the end of grade 8 students will:

F.8.1 Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings	B.8.1 Define the need for information B.8.2 Develop information seeking strategies B.8.3 Locate and access information sources B.8.4 Evaluate and select information from a variety of print, nonprint, and electronic formats B.8.5 Record and organize information B.8.6 Interpret and use information to solve the problem or answer the question B.8.7 Communicate the results of research and inquiry in an appropriate format B.8.8 Evaluate the information product and process
• Formulate research questions and focus investigation on relevant and accessible sources of information	• identify the information problem or question to be resolved—B.8.1 • relate what is already known to the information need—B.8.1 • formulate general and specific research questions using a variety of questioning skills—B.8.1 • revise and narrow the information questions to focus on the information need—B.8.1 • identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 • focus search strategies on matching information needs with available resources—B.8.2
• Use multiple sources to identify and locate information pertinent to research including encyclopedias, almanacs, dictionaries, library catalogs, indexes to periodicals, and various electronic search engines	• use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 • access information using a modem or network connection to the Internet or other on-line information services—A.8.4 • view, print, save, and open a document from the Internet or other on-line sources—A.8.4 • use basic search engines and directories to locate resources on a specific topic—A.8.4 • demonstrate efficient Internet navigation—A.8.4 • organize World Wide Web bookmarks by subject or topic—A.8.4 • select multiple sources that reflect differing or supporting points of view—B.8.2

	• identify and select keywords and phrases for each source, recognizing that different sources use different terminology for similar concepts—B.8.2
	• identify the classification system used in the school library media center, public library, and other local libraries--B.8.3
	• locate materials using the classification systems of the school library media center and the public library—B.8.3
	• use an on-line catalog and other databases of print and electronic resources—B.8.3
	• recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3
	• search for information by subject, author, title, and keyword—B.8.3
	• use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3
	• use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
	• use a search engine to locate appropriate Internet or Intranet resources—B.8.3
• Conduct interviews, field studies, and experiments and use specialized resources (such as almanacs, fact books, pamphlets, and technical manuals) when appropriate to an investigation	• use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
	• recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3
	• analyze and evaluate information presented in charts, graphs, and tables—B.8.4
• Compile, organize, and evaluate information, taking notes that record and summarize what has been learned and extending the investigation to other sources	• use notetaking strategies including summarizing and paraphrasing—B.8.5
	• record concise notes in a prescribed manner, including bibliographic information—B.8.5
	• cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5
	• organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
	• organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
	• record sources of information in a standardized bibliographic format—B.8.5
	• analyze findings to determine need for additional information—B.8.6
	• gather and synthesize additional information as needed—B.8.6
• Review and evaluate the usefulness of information gathered in an investigation	• compare and integrate new information with prior knowledge—B.8.6
	• analyze information for relevance to the question—B.8.6

- analyze findings to determine need for additional information—B.8.6
- gather and synthesize additional information as needed—B.8.6
- draw conclusions to address the problem or question—B.8.6

- Produce an organized written and oral report that presents and reflects on findings, draws sound conclusions, adheres to the conventions for preparing a manuscript, and gives proper credit to sources

- cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5
- record sources of information in a standardized bibliographic format—B.8.5
- draw conclusions to address the problem or question—B.8.6
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7
- cite the source for words which are quoted verbatim and for pictures, graphics, and audio or video segments which are used in a product or presentation—D.8.3

By the end of grade 12 students will:

F.12.1 Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings

B.12.1 Define the need for information

B.12.2 Develop information seeking strategies

B.12.3 Locate and access information sources

B.12.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

B.12.5 Record and organize information

B.12.6 Interpret and use information to solve the problem or answer the question

B.12.7 Communicate the results of research and inquiry in an appropriate format

B.12.8 Evaluate the information product and process

- Formulate questions addressing issues or problems that can be answered through a well-defined and focused investigation

- state the information problem or question in clear and concise terms—B.12.1
- relate prior knowledge to the problem or question—B.12.1

- develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1
- conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1
- identify topics for independent study to meet individual learning needs and interests—C.12.4
- develop and apply criteria for judging success of learning projects—C.12.4
- establish goals, plans, budgets, and timelines for completing a project—C.12.4

- Use research tools found in school and college libraries, take notes, collect and classify sources, and develop strategies for finding and recording information

- identify and explain the use of common microforms—A.12.2
- choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4
- employ FTP (file transfer protocol) to retrieve and download computer files from a remote computer—A.12.4
- use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4
- establish access to primary sources and other experts for class reports or projects—A.12.4
- participate in an on-line discussion group or listserv appropriate to a content area—A.12.4
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- identify the different classification systems used in local school, public and post-secondary libraries, and resource agencies—B.12.3
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3
- use different search strategies for bibliographic citations, abstracts, and full-text resources in electronic formats—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- determine when to use general or specialized print and electronic reference tools—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3

	• use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 • follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 • credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 • analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 • compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
• Conduct interviews, taking notes or recording and transcribing oral information, then summarizing the results	• develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 • use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 • follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 • analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 • interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 • synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
• Develop research strategies appropriate to the investigation, considering methods such as questionnaires, experiments, and field studies	• develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
• Organize research materials and data, maintaining a note-taking system that includes summary, paraphrase, and quoted material	• use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 • follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 • credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 • analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 • compile a bibliography in a format stipulated by an accepted manual of style—B.12.5

	• explain conditions under which permission must be obtained for the use of copyrighted materials—D.12.3
	• describe how to correspond with authors, publishers, or producers to obtain permission to use copyrighted materials in their work—D.12.3
• Evaluate the usefulness and credibility of data and sources by applying tests of evidence, including bias, position, expertise, adequacy, validity, reliability, and date	• select information clearly related to the problem or question—B.12.4
	• evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
	• distinguish among fact, opinion, point of view, and inference—B.12.4
	• determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
	• evaluate graphic images for misleading presentation and manipulated data—B.12.4
	• determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
	• select information in formats and genre most appropriate to content—B.12.4
	• credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
• Analyze, synthesize, and integrate data, drafting a reasoned report that supports and appropriately illustrates inferences and conclusions drawn from research	• interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
	• synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
	• draw conclusions and support them with credible evidence—B.12.6
• Present findings in oral and written reports, correctly citing sources	• credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
	• compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
	• compare strengths and weaknesses of possible presentation methods and products—B.12.7
	• select the most appropriate format for the product or presentation—B.12.7
	• develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
	• describe how to correspond with authors, publishers, or producers to obtain permission to use copyrighted materials in their work—D.12.3

Mathematics

Content Standards:

A. Mathematical Processes
B. Number Operations and
C. Geometry
D. Measurement
E. Statistics and Probability
F. Algebraic Relationships

A. Mathematical Processes

By the end of grade 4 students will:

A.4.1 Use reasoning abilities to

- perceive patterns
- identify relationships
- formulate questions for further exploration
- justify strategies
- test reasonableness of results

A.4.2 Communicate mathematical ideas in a variety of ways, including words, numbers, symbols, pictures, charts, graphs, tables, diagrams, and models

Information & Technology Literacy

Content Standards:

A. Media and Technology
B. Information and Inquiry
C. Independent Learning
D. The Learning Community

- formulate initial questions to define what additional information is needed—B.4.1
- determine a specific focus for the information search questions—B.4.1

- incorporate graphics, pictures, and sound into another document—A.4.2
- identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3
- use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

A.4.3 Connect mathematical learning with other subjects, personal experiences, current events, and personal interests

- see relationships between various kinds of problems and actual events
- use mathematics as a way to understand other areas of the curriculum (e.g., measurement in science, map skills in social studies)

- identify new information and integrate it with prior knowledge—B.4.6
- recognize that materials in the school library media center are organized in a systematic manner—B.4.3
- locate materials using the classification system of the school library media center—B.4.3

A.4.4 Use appropriate mathematical vocabulary, symbols, and notation with understanding based on prior conceptual work

- identify new information and integrate it with prior knowledge—B.4.6

A.4.5 Explain solutions to problems clearly and logically in oral and written work and support solutions with evidence

- determine if information is relevant to the information question—B.4.6
- select information applicable to the information question—B.4.6
- seek additional information if needed—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

By the end of grade 8 students will:

A.8.1 Use reasoning abilities to

- evaluate information

- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- differentiate between primary and secondary sources—B.8.4

	• distinguish between fact and opinion; recognize point of view or bias—B.8.4
	• determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
	• analyze and evaluate information presented in charts, graphs, and tables—B.8.4
	• locate indicators of authority for all sources of information—B.8.4
• perceive patterns	• organize ideas, concepts, and phrases using webbing, outlines, trees, or other visual or graphic tools—B.8.2
	• organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
	• compare and integrate new information with prior knowledge—B.8.6
• identify relationships	• organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
	• organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
	• compare and integrate new information with prior knowledge—B.8.6
• formulate questions for further exploration	• formulate general and specific research questions using a variety of questioning skills—B.8.1
	• revise and narrow the information questions to focus on the information need—B.8.1
	• analyze findings to determine need for additional information—B.8.6
• evaluate strategies	• focus search strategies on matching information needs with available resources—B.8.2
• justify statements	
• test reasonableness of results	• compare and integrate new information with prior knowledge—B.8.6
	• analyze findings to determine need for additional information—B.8.6
	• gather and synthesize additional information as needed—B.8.6
• defend work	• draw conclusions to address the problem or question—B.8.6
A.8.2 Communicate logical arguments clearly to show why a result makes sense	• select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
	• develop an original product or presentation which addresses the information problem or question—B.8.7

A.8.3 Analyze nonroutine problems by modeling, illustrating, guessing, simplifying, generalizing, shifting to another point of view, etc.

A.8.4 Develop effective oral and written presentations that include

- appropriate use of technology
  - use graphics software to import pictures, images, and charts into documents—A.8.3
  - use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3
  - compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3
  - incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
  - use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
  - plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
  - select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
  - develop an original product or presentation which addresses the information problem or question—B.8.7
- the conventions of mathematical discourse (e.g., symbols, definitions, labeled drawings)
- mathematical language
- clear organization of ideas and procedures
  - organize ideas, concepts, and phrases using webbing, outlines, trees, or other visual or graphic tools—B.8.2
  - organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- understanding of purpose and audience
  - determine the audience and purpose for the product or presentation—B.8.7

A.8.5 Explain mathematical concepts, procedures, and ideas to others who may not be familiar with them

A.8.6 Read and understand mathematical texts and other instructional materials and recognize mathematical ideas as they appear in other contexts

C.8.3 Develop competence and selectivity in reading, listening, and viewing

By the end of grade 12 students will:

A.12.1 Use reason and logic to

- evaluate information
  - select information clearly related to the problem or question—B.12.4
  - evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
  - distinguish among fact, opinion, point of view, and inference—B.12.4
  - determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive--B.12.4
  - evaluate graphic images for misleading presentation and manipulated data—B.12.4
  - determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
  - use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- perceive patterns
  - analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
  - organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- identify relationships
  - analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- formulate questions, pose problems, and make and test conjectures
  - develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1
- pursue ideas that lead to further understanding and deeper insight
  - synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

A.12.2 Communicate logical arguments and clearly show

- why a result does or does not make sense
- why the reasoning is or is not valid
- an understanding of the difference between examples that support a conjecture and a proof of the conjecture

B.12.7 Communicate the results of research and inquiry in an appropriate format

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A.12.3 Analyze nonroutine problems and arrive at solutions by various means, including models and simulations, often starting with provisional conjectures and progressing, directly or indirectly, to a solution, justification, or counter-example

A.12.4 Develop effective oral and written presentations employing correct mathematical terminology, notation, symbols, and conventions for mathematical arguments and display of data

A.12.3 Use a computer and productivity software to organize and create information

- use an integrated program or applications suite to complete a class assignment—A.12.3
- manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3
- use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
- analyze data from a database and present conclusions in a document or report—A.12.3
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3

A.12.4 Use a computer and communications software to access and transmit information

- use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4
- participate in an on-line discussion group or listserv appropriate to a content area—A.12.4

A.12.5 Use media and technology to create and present information

- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- develop a document or file for inclusion into a website or web page—A.12.5
- participate in a desktop conferencing session to present and share information with others—A.12.5

B.12.7 Communicate the results of research and inquiry in an appropriate format

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

A.12.5 Organize work and present mathematical procedures and results clearly, systematically, succinctly, and correctly

B.12.5 Record and organize information

- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

B.12.6 Interpret and use information to solve the problem or answer the question

- draw conclusions and support them with credible evidence—B.12.6

A.12.6 Read and understand

- mathematical texts and other instructional materials
- writing about mathematics (e.g., articles in journals)
- mathematical ideas as they are used in other contexts

C.12.3 Develop competence and selectivity in reading, listening, and viewing

B. Number Operations and Relationships

By the end of grade 4 students will:

B.4.1 Represent and explain whole numbers, decimals, and fractions with

- physical materials
- number lines and other pictorial models
- verbal descriptions

- locate materials using the classification system of the school library media center—B.4.3

- place-value concepts and notation
- symbolic renaming (e.g., 43 = 40+3 = 30+13)

B.4.2 Determine the number of things in a set by

- grouping and counting (e.g., by threes, fives, hundreds)
- combining and arranging (e.g., all possible coin combinations amounting to thirty cents)
- estimation, including rounding

B.4.3 Read, write, and order whole numbers, simple fractions (e.g., halves, fourths, tenths, unit fractions) and commonly-used decimals (monetary units)

B.4.4 Identify and represent equivalent fractions for halves, fourths, eighths, tenths, sixteenths

B.4.5 In problem-solving situations involving whole numbers, select and efficiently use appropriate computational procedures such as

- recalling the basic facts of addition, subtraction, multiplication, and division
- using mental math (e.g., 37 + 25, 40 x 7)
- estimation
- selecting and applying algorithms for addition, subtraction, multiplication, and division
- using a calculator

- solve problems using the basic four arithmetic functions of a calculator when appropriate—A.4.1

By the end of grade 8 students will:

B.8.1 Read, represent, and interpret various rational numbers (whole numbers, integers, decimals, fractions, and percents) with verbal descriptions, geometric models, and mathematical notation (e.g., expanded, scientific, exponential)

B.8.2 Perform and explain operations on rational numbers (add, subtract, multiply, divide, raise to a power, extract a root, take opposites and reciprocals, determine absolute value)

B.8.3 Generate and explain equivalencies among fractions, decimals, and percents

B.8.4 Express order relationships among rational numbers using appropriate symbols

$(>, <, \geq, \leq, \neq)$

B.8.5 Apply proportional thinking in a variety of problem situations that include, but are not limited to

- ratios and proportions (e.g., rates, scale drawings, similarity)
- percents, including those greater than 100 and less than one (e.g., discounts, rate of increase or decrease, sales tax)

B.8.6 Model and solve problems involving number-theory concepts such as

- prime and composite numbers
- divisibility and remainders
- greatest common factors
- least common multiples

B.8.7 In problem-solving situations, select and use appropriate computational procedures with rational numbers such as

- calculating mentally
- estimating
- creating, using, and explaining algorithms using technology (e.g., scientific calculators, spreadsheets)
- use simple graphing calculator functions to solve a problem—A.8.1
- construct a simple spreadsheet, enter data, and interpret the information—A.8.3

- plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3

By the end of grade 12 students will:

B.12.1 Use complex counting procedures such as union and intersection of sets and arrangements (permutations and combinations) to solve problems.

B.12.2 Compare real numbers using

- order relations (>, <) and transitivity
- ordinal scales including logarithmic (e.g., Richter, pH rating)
- arithmetic differences
- ratios, proportions, percents, rates of change

B.12.3 Perform and explain operations on real numbers (add, subtract, multiply, divide, raise to a power, extract a root, take opposites and reciprocals, determine absolute value)

B.12.4 In problem-solving situations involving the application of different number systems (natural, integers, rational, real) select and use appropriate

- computational procedures
- properties (e.g., commutativity, associativity, inverses)
- modes of representation (e.g., rationals as repeating decimals, indicated roots as fractional exponents)

B.12.5 Create and critically evaluate numerical arguments presented in a variety of classroom and real-world situations (e.g., political, economic, scientific, social)

- evaluating strategies
- testing the reasonableness of results
- using technology to carry out computations

B.12.5 Record and organize information

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4

C. Geometry

By the end of grade 4 students will:

C.4.1 Describe two-and three-dimensional figures (e.g., circles, polygons, trapezoids, prisms, spheres) by

- naming them
- comparing, sorting, and classifying them
- drawing and constructing physical models to specifications
- identifying their properties (e.g., number of sides or faces, two- or three-dimensionality, equal sides, number of right angles)
- predicting the results of combining or subdividing two-dimensional figures
- explaining how these figures are related to objects in the environment

C.4.2 Use physical materials and motion geometry (such as slides, flips, and turns) to identify properties and relationships, including but not limited to

- symmetry
- congruence
- similarity

C.4.3 Identify and use relationships among figures, including but not limited to

- location (e.g., between, adjacent to, interior of)
- position (e.g., parallel, perpendicular)
- intersection (of two-dimensional figures)

C.4.4 Use simple two-dimensional coordinate systems to find locations on maps and to represent points and simple figures

By the end of grade 8 students will:

C.8.1 Describe special and complex two- and three-dimensional figures (e.g., rhombus, polyhedron, cylinder) and their component parts (e.g., base, altitude, and slant height) by

- naming, defining, and giving examples
- comparing, sorting, and classifying them
- identifying and contrasting their properties (e.g., symmetrical, isosceles, regular)
- drawing and constructing physical models to specifications
- explaining how these figures are related to objects in the environment

C.8.2 Identify and use relationships among the component parts of special and complex two- and three-dimensional figures (e.g., parallel sides, congruent faces)

C.8.3 Identify three-dimensional shapes from two-dimensional perspectives and draw two-dimensional sketches of three-dimensional objects preserving their significant features

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5

C.8.4 Perform transformations on two-dimensional figures and describe and analyze the effects of the transformations on the figures

C.8.5 Locate objects using the rectangular coordinate system

By the end of grade 12 students will:

C.12.1 Identify, describe, and analyze properties of figures, relationships among figures, and relationships among their parts by

- constructing physical models
- drawing precisely with paper and pencil, hand calculators, and computer software

- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3

- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

- using appropriate transformations (e.g., translations, rotations, reflections, enlargements)

- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

- using reason and logic

C.12.2 Use geometric models to solve mathematical and real-world problems

- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

C.12.3 Present convincing arguments by means of demonstration, informal proof, counter-examples, or any other logical means to show the truth of

- statements (e.g., "these two triangles are not congruent")
- generalizations (e.g., "the Pythagorean theorem holds for all right triangles")

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6

C.12.4 Use the two-dimensional rectangular coordinate system and algebraic procedures to describe and characterize geometric properties and relationships such as slope, intercepts, parallelism, and perpendicularity

C.12.5 Identify and demonstrate an understanding of the three ratios used in right-triangle trigonometry (sine, cosine, tangent)

D. Measurement

By the end of grade 4 students will:

D.4.1 Recognize and describe measurable attributes, such as length, liquid capacity, time, weight (mass), temperature, volume, monetary value, and angle size, and identify the appropriate units to measure them

D.4.2 Demonstrate understanding of basic facts, principles, and techniques of measurement, including

- appropriate use of arbitrary and standard units (metric and US Customary)
- appropriate use and conversion of units within a system (such as yards, feet, and inches; kilograms and grams; gallons, quarts, pints, and cups)
- judging the reasonableness of an obtained measurement as it relates to prior experience and familiar benchmarks

- identify new information and integrate it with prior knowledge—B.4.6

D.4.3 Read and interpret measuring instruments (e.g., rulers, clocks, thermometers)

D.4.4 Determine measurements directly by using standard tools to these suggested degrees of accuracy

- length to the nearest half-inch or nearest centimeter
- weight (mass) to the nearest ounce or nearest 5 grams
- temperature to the nearest 5°
- time to the nearest minute
- monetary value to dollars and cents
- liquid capacity to the nearest fluid ounce

D.4.5 Determine measurements by using basic relationships (such as perimeter and area) and approximate measurements by using estimation techniques

By the end of grade 8 students will:

D.8.1 Identify and describe attributes in situations where they are not directly or easily measurable (e.g., distance, area of an irregular figure, likelihood of occurrence)

D.8.2 Demonstrate understanding of basic measurement facts, principles, and techniques including the following

- approximate comparisons between metric and US Customary units (e.g., a liter and a quart are about the same; a kilometer is about six-tenths of a mile)
- knowledge that direct measurement produces approximate, not exact, measures
- the use of smaller units to produce more precise measures

D.8.3 Determine measurement directly using standard units (metric and US Customary) with these suggested degrees of accuracy

- lengths to the nearest mm or 1/16 of an inch
- weight (mass) to the nearest 0.1 g or 0.5 ounce
- liquid capacity to the nearest milliliter
- angles to the nearest degree
- temperature to the nearest C° or F°
- elapsed time to the nearest second

D.8.4 Determine measurements indirectly using

- estimation
- conversion of units within a system (e.g., quarts to cups, millimeters to centimeters)
- ratio and proportion (e.g., similarity, scale drawings)
- geometric formulas to derive lengths, areas, volumes of common figures (e.g., perimeter, circumference, surface area)
- the Pythagorean relationship
- geometric relationships and properties for angle size (e.g., parallel lines and transversals; sum of angles of a triangle; vertical angles)

By the end of grade 12 students will:

D.12.1 Identify, describe, and use derived attributes (e.g., density, speed, acceleration, pressure) to represent and solve problem situations

D.12.2 Select and use tools with appropriate degree of precision to determine measurements directly within specified degrees of accuracy and error (tolerance)

D.12.3 Determine measurements indirectly, using

- estimation
- proportional reasoning, including those involving squaring and cubing (e.g., reasoning that areas of circles are proportional to the squares of their radii)
- techniques of algebra, geometry, and right triangle trigonometry
- formulas in applications (e.g., for compound interest, distance formula)
- geometric formulas to derive lengths, areas, or volumes of shapes and objects (e.g., cones, parallelograms, cylinders, pyramids)
- geometric relationships and properties of circles and polygons (e.g., size of central angles, area of a sector of a circle) conversion constants to relate measures in one system to another (e.g., meters to feet, dollars to Deutschmarks)

E. Statistics and Probability

By the end of grade 4 students will:

E.4.1 Work with data in the context of real-world situations by

- formulating questions that lead to data collection and analysis

B.4.1 Define the need for information

B.4.2 Develop information seeking strategies

B.4.3 Locate and access information sources

B.4.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

B.4.5 Record and organize information

B.4.6 Interpret and use information to solve the problem or answer the question

B.4.7 Communicate the results of research and inquiry in an appropriate format

B.4.8 Evaluate the information product and process

- identify the information problem or question to be resolved—B.4.1
- determine what is already known about the information problem or question—B.4.1

	• formulate initial questions to define what additional information is needed—B.4.1
• determining what data to collect and when and how to collect them	• identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2
	• log on and view information from preselected sites on the Internet—A.4.4
	• use the functions of a web browser to navigate and save World Wide Web sites—A.4.4
	• identify and use simple search engines and directories—A.4.4
	• determine a specific focus for the information search questions—B.4.1
	• identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
	• evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
	• list steps to follow in carrying out the information search—B.4.2
	• locate materials using the classification system of the school library media center—B.4.3
	• identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
	• search for information by keyword, author, title, and topic or subject—B.4.3
	• locate information from preselected Internet sites and web pages—B.4.3
	• preview selected resources using table of contents, index, and other simple scanning strategies—B.4.4
	• determine timeliness and validity of information sources—B.4.4
	• recognize that graphics and images can be used to convey a message—B.4.4
• collecting, organizing, and displaying data	• use a prepared database template to enter and edit data, and to locate records—A.4.3
	• use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
	• use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
	• take notes or record information in their own words—B.4.5
	• record the sources of information as notes are taken—B.4.5

- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- list basic bibliographic sources for information used—B.4.5
- recognize that a quoted work must be stated in the author's exact words—D.4.3
- list sources quoted verbatim and visuals used in a presentation—D.4.3

- drawing reasonable conclusions based on data

- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

E.4.2 Describe a set of data using

- high and low values, and range
- most frequent value (mode)
- middle value of a set of ordered data (median)

E.4.3 In problem-solving situations, read, extract, and use information presented in graphs, tables, or charts.

- incorporate graphics, pictures, and sound into another document—A.4.2
- use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
- recognize that graphics and images can be used to convey a message—B.4.4

E.4.4 Determine if the occurrence of future events are more, less, or equally likely, impossible, or certain

E.4.5 Predict outcomes of future events and test predictions using data from a variety of sources

- identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2
- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2

- select more than one resource when appropriate—B.4.2
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

By the end of grade 8 students will:

E.8.1 Work with data in the context of real-world situations by	**B.8.1 Define the need for information** **B.8.2 Develop information seeking strategies** **B.8.3 Locate and access information sources** **B.8.4 Evaluate and select information from a variety of print, nonprint, and electronic formats** **B.8.5 Record and organize information** **B.8.6 Interpret and use information to solve the problem or answer the question** **B.8.7 Communicate the results of research and inquiry in an appropriate format** **B.8.8 Evaluate the information product and process**
• formulating questions that lead to data collection and analysis	• identify the information problem or question to be resolved—B.8.1 • relate what is already known to the information need—B.8.1 • formulate general and specific research questions using a variety of questioning skills—B.8.1 • revise and narrow the information questions to focus on the information need—B.8.1
• designing and conducting a statistical investigation	• identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 • evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2

- select multiple sources that reflect differing or supporting points of view—B.8.2
- identify and select keywords and phrases for each source, recognizing that different sources use different terminology for similar concepts—B.8.2
- organize ideas, concepts, and phrases using webbing, outlines, trees, or other visual or graphic tools—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- search for information by subject, author, title, and keyword—B.8.3
- use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- differentiate between primary and secondary sources—B.8.4
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- locate indicators of authority for all sources of information—B.8.4
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- record concise notes in a prescribed manner, including bibliographic information—B.8.5
- cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- analyze information for relevance to the question—B.8.6

- analyze findings to determine need for additional information—B.8.6
- gather and synthesize additional information as needed—B.8.6
- draw conclusions to address the problem or question—B.8.6
- establish goals and develop a plan for completing projects on time and within the scope of the assignment—C.8.4

- using technology to generate displays, summary statistics, and presentations

- classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3
- construct a simple spreadsheet, enter data, and interpret the information—A.8.3
- plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

E.8.2 Organize and display data from statistical investigations using

- appropriate tables, graphs, and/or charts (e.g., circle, bar, or line for multiple sets of data)

- plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5

- appropriate plots (e.g., line, stem-and-leaf, box, scatter)

E.8.3 Extract, interpret, and analyze information from organized and displayed data by using

- frequency and distribution, including mode and range
- central tendencies of data (mean and median)
- indicators of dispersion (e.g., outliers)

E.8.4 Use the results of data analysis to

- make predictions
- develop convincing arguments
  - locate indicators of authority for all sources of information—B.8.4
  - compare and integrate new information with prior knowledge—B.8.6
- draw conclusions
  - draw conclusions to address the problem or question—B.8.6

E.8.5 Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses

- select multiple sources that reflect differing or supporting points of view—B.8.2
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5

E.8.6 Evaluate presentations and statistical analyses from a variety of sources for

- credibility of the source
  - locate indicators of authority for all sources of information—B.8.4
- techniques of collection, organization, and presentation of data
  - describe the effectiveness of the media and technology used in a production or presentation—A.8.6
  - identify criteria for judging the technical quality of a production or presentation—A.8.6
  - judge how well the production or presentation meets identified criteria—A.8.6
  - recommend ways to improve future productions or presentations—A.8.6
  - identify the criteria to be used in judging both the product (or presentation) and the process—B.8.8
  - determine how well research conclusions and product meet the original information need or question based on the identified criteria—B.8.8
  - assess the process based on identified criteria—B.8.8
  - summarize ways in which the process and product can be improved—B.8.8

- missing or incorrect data
- inferences
- possible sources of bias

- analyze findings to determine need for additional information—B.8.6
- gather and synthesize additional information as needed—B.8.6
- distinguish between fact and opinion; recognize point of view or bias—B.8.4

E.8.7 Determine the likelihood of occurrence of simple events by

- using a variety of strategies to identify possible outcomes (e.g., lists, tables, tree diagrams)
- conducting an experiment
- designing and conducting simulations
- applying theoretical notions of probability (e.g., that four equally likely events have a 25 percent chance of happening)

- use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
- organize ideas, concepts, and phrases using webbing, outlines, trees, or other visual or graphic tools—B.8.2
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5

By the end of grade 12 students will:

E.12.1 Work with data in the context of real-world situations by

B.12.1 Define the need for information

B.12.2 Develop information seeking strategies

B.12.3 Locate and access information sources

B.12.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

B.12.5 Record and organize information

B.12.6 Interpret and use information to solve the problem or answer the question

B.12.7 Communicate the results of research and inquiry in an appropriate format

- formulating hypotheses that lead to collection and analysis of one- and two-variable data
- designing a data collection plan that considers random sampling, control groups, the role of assumptions, etc.
- conducting an investigation based on that plan

B.12.8 Evaluate the information product and process

- state the information problem or question in clear and concise terms—B.12.1
- relate prior knowledge to the problem or question—B.12.1
- develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1
- conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
- establish goals, plans, budgets, and timelines for completing a project—C.12.4
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- identify and evaluate keywords, concepts, subject headings, and descriptors for each information source—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- determine when to use general or specialized print and electronic reference tools—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
- select information clearly related to the problem or question—B.12.4
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4

- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

- using technology to generate displays, summary statistics, and presentations

- use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3
- analyze data from a database and present conclusions in a document or report—A.12.3
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- produce a multimedia program using text, graphics, moving images, and sound—A.12.5
- develop a document or file for inclusion into a website or web page—A.12.5
- participate in a desktop conferencing session to present and share information with others—A.12.5
- select the most appropriate format for the product or presentation—B.12.7

- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

E.12.2 Organize and display data from statistical investigations using

- frequency distributions
- percentiles, quartiles, deciles
- line of best fit (estimated regression line)
- matrices

- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

E.12.3 Interpret and analyze information from organized and displayed data when given

- analyze data from a database and present conclusions in a document or report—A.12.3
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

- measures of dispersion, including standard deviation and variance
- measures of reliability
- measures of correlation

E.12.4 Analyze, evaluate, and critique the methods and conclusions of statistical experiments reported in journals, magazines, news media, advertising, etc.

B.12.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4

- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4

E.12.5 Determine the likelihood of occurrence of complex events by

- using a variety of strategies (e.g., combinations) to identify possible outcomes
- conducting an experiment
- designing and conducting simulations
- applying theoretical probability

- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

F. Algebraic Relationships

By the end of grade 4 students will:

F.4.1 Use letters, boxes, or other symbols to stand for any number, measured quantity, or object in simple situations (e.g., N + 0 = N is true for any number)

F.4.2 Use the vocabulary, symbols, and notation of algebra accurately (e.g., correct use of the symbol "=", effective use of the associative property of multiplication)

F.4.3 Work with simple linear patterns and relationships in a variety of ways, including

- recognizing and extending number patterns
- describing them verbally
- representing them with pictures, tables, charts, graphs

- incorporate graphics, pictures, and sound into another document—A.4.2
- use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
- recognize that graphics and images can be used to convey a message—B.4.4
- recognize different ways to organize ideas, concepts, and phrases—B.4.2

- recognizing that different models can represent the same pattern or relationship
- using them to describe real-world phenomena

F.4.4 Recognize variability in simple functional relationships by describing how a change in one quantity can produce a change in another (e.g., number of bicycles and the total number of wheels)

F.4.5 Use simple equations and inequalities in a variety of ways, including

- using them to represent problem situations
- solving them by different methods (e.g., use of manipulatives, guess and check strategies, recall of number facts)
- recording and describing solution strategies

F.4.6 Recognize and use generalized properties and relationships of arithmetic (e.g., commutativity of addition, inverse relationship of multiplication and division)

By the end of grade 8 students will:

F.8.1 Work with algebraic expressions in a variety of ways, including

- using appropriate symbolism, including exponents and variables
- evaluating expressions through numerical substitution
- generating equivalent expressions
- adding and subtracting expressions

F.8.2 Work with linear and nonlinear patterns and relationships in a variety of ways, including

- representing them with tables, with graphs, and with algebraic expressions, equations, and inequalities
- use simple graphing calculator functions to solve a problem-A.8.1

- use graphics software to import pictures, images, and charts into documents—A.8.3
- plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5

- describing and interpreting their graphical representations (e.g., slope, rate of change, intercepts)
- using them as models of real-world phenomena
- describing a real-world phenomenon that a given graph might represent

F.8.3 Recognize, describe, and analyze functional relationships by generalizing a rule that characterizes the pattern of change among variables. These functional relationships include exponential growth and decay (e.g., cell division, depreciation)

F.8.4 Use linear equations and inequalities in a variety of ways, including

- writing them to represent problem situations and to express generalizations
- solving them by different methods (e.g., informally, graphically, with formal properties, with technology)

- use basic content-specific tools (e.g., environmental probes, measurement sensors) to provide evidence/support in a class project—A.8.1
- scan, crop, and save a graphic using a scanner, digital camera, or other digitizing equipment—A.8.1
- use simple graphing calculator functions to solve a problem—A.8.1

- writing and evaluating formulas (including solving for a specified variable)
- using them to record and describe solution strategies

F.8.5 Recognize and use generalized properties and relations, including

- additive and multiplicative property of equations and inequalities
- commutativity and associativity of addition and multiplication

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- distributive property
- inverses and identities for addition and multiplication
- transitive property

By the end of grade 12 students will:

F.12.1 Analyze and generalize patterns of change (e.g., direct and inverse variation) and numerical sequences, and then represent them with algebraic expressions and equations

F.12.2 Use mathematical functions (e.g., linear, exponential, quadratic, power) in a variety of ways, including

- recognizing that a variety of mathematical and real-world phenomena can be modeled by the same type of function
- translating different forms of representing them (e.g., tables, graphs, functional notation, formulas)
  - demonstrate how to import and export text, graphic, and sound files—A.12.2
  - manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3
  - construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
  - use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
  - analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- describing the relationships among variable quantities in a problem
- using appropriate technology to interpret properties of their graphical representations (e.g., intercepts, slopes, rates of change, changes in rates of change, maximum, minimum)
  - construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
  - use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

F.12.3 Solve linear and quadratic equations, linear inequalities, and systems of linear equations and inequalities

- numerically

- graphically, including use of appropriate technology
- symbolically, including use of the quadratic formula

- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

F.12.4 Model and solve a variety of mathematical and real-world problems by using algebraic expressions, equations, and inequalities

Science

Content Standards:

A. Science Connections
B. Nature of Science
C. Science Inquiry
D. Physical Science
E. Earth and Space Science
F. Life and Environmental Science
G. Science Applications
H. Science in Social and Personal Perspectives

A. Science Connections

By the end of grade 4 students will:

A.4.1 When conducting science investigations, ask and answer questions that will help decide the general areas of science being addressed

A.4.2 When faced with a science-related problem, decide what evidence, models, or explanations previously studied can be used to better understand what is happening now

A.4.3 When investigating a science-related problem, decide what data can be collected to determine the most useful explanations

Information & Technology Literacy

Content Standards:

A. Media and Technology
B. Information and Inquiry
C. Independent Learning
D. The Learning Community

- identify the information problem or question to be resolved—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1
- determine a specific focus for the information search questions—B.4.1
- identify topics suitable for independent learning or in-depth exploration—C.4.4
- determine what is already known about the information problem or question—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2

- select more than one resource when appropriate—B.4.2
- list steps to follow in carrying out the information search—B.4.2

A.4.4 When studying science-related problems, decide which of the science themes are important

A.4.5 When studying a science-related problem, decide what changes over time are occurring or have occurred

- determine what is already known about the information problem or question—B.4.1

By the end of grade 8 students will:

A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems

- identify the information problem or question to be resolved—B.8.1
- relate what is already known to the information need—B.8.1
- formulate general and specific research questions using a variety of questioning skills—B.8.1
- revise and narrow the information questions to focus on the information need—B.8.1

A.8.2 Describe limitations of science systems and give reasons why specific science themes are included in or excluded from those systems

A.8.3 Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them

- select multiple sources that reflect differing or supporting points of view—B.8.2

A.8.4 Collect evidence to show that models developed as explanations for events were (and are) based on the evidence available to scientists at the time

A.8.5 Show how models and explanations, based on systems, were changed as new evidence accumulated (the effects of constancy, evolution, change, and measurement should all be part of these explanations)

- compare and integrate new information with prior knowledge—B.8.6

A.8.6 Use models and explanations to predict actions and events in the natural world

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5

A.8.7 Design real or thought investigations to test the usefulness and limitations of a model

A.8.8 Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world

By the end of grade 12 students will:

A.12.1 Apply the underlying themes of science to develop defensible visions of the future

A.12.2 Show how conflicting assumptions about science themes lead to different opinions and decisions about evolution, health, population, longevity, education, and use of resources, and show how these opinions and decisions have diverse effects on an individual, a community, and a country, both now and in the future

A.12.3 Give examples that show how partial systems, models, and explanations are used to give quick and reasonable solutions that are accurate enough for basic needs

A.12.4 Construct arguments that show how conflicting models and explanations of events can start with similar evidence

A.12.5 Show how the ideas and themes of science can be used to make real-life decisions about careers, work places, life-styles, and use of resources

A.12.6 Identify and replace inaccurate personal models and explanations of science-related phenomena using evidence learned or discovered

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

A.12.7 Re-examine the evidence and reasoning that led to conclusions drawn from investigations, using the science themes

- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions to address the problem or question—B.12.6

B. Nature of Science

By the end of grade 4 students will:

B.4.1 Use encyclopedias, source books, texts, computers, teachers, parents, other adults, journals, popular press, and various other sources, to help answer science-related questions and plan investigations

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify and use simple search engines and directories—A.4.4
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

B.4.2 Acquire information about people who have contributed to the development of major ideas in the sciences and learn about the cultures in which these people lived and worked

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify and use simple search engines and directories—A.4.4
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

B.4.3 Show how the major developments of scientific knowledge in the earth and space, life and environmental, and physical sciences have changed over time

- identify new information and integrate it with prior knowledge—B.4.6

By the of grade 8 students will:

B.8.1 Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences

- compare and integrate new information with prior knowledge—B.8.6

B.8.2 Identify and describe major changes that have occurred over time in conceptual models and explanations in the earth and space, life and environmental, and physical sciences, and identify the people, cultures, and conditions that led to these developments

- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- search for information by subject, author, title, and keyword—B.8.3
- use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3

B.8.3 Explain how the general rules of science apply to the development and use of evidence in science investigations, model-making, and applications

- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

B.8.4 Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world

B.8.5 Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time

- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues

- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

By the end of grade 12 students will:

B.12.1 Show how cultures and individuals have contributed to the development of major ideas in the earth and space, life and environmental, and physical sciences

B.12.2 Identify the cultural conditions that are usually present during great periods of discovery, scientific development, and invention

B.12.3 Relate the major themes of science to human progress in understanding science and the world

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)— B.12.5

B.12.4 Show how basic research and applied research contribute to new discoveries, inventions, and applications

B.12.5 Explain how science is based on assumptions about the natural world and themes that describe the natural world

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C. Science Inquiry

By the end of grade 4 students will:

C.4.1 Use the vocabulary of the unifying themes to ask questions about objects, organisms, and events being studied

- identify the information problem or question to be resolved—B.4.1
- determine what is already known about the information problem or question—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1

C.4.2 Use the science content being learned to ask questions, plan investigations, make observations, make predictions, and offer explanations

- determine what is already known about the information problem or question—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1
- determine a specific focus for the information search questions—B.4.1

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- list steps to follow in carrying out the information search—B.4.2
- identify topics of interest and seek relevant information about them—C.4.1
- share information and ideas with others—D.4.1

C.4.3 Select multiple sources of information to help answer questions selected for classroom investigations

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify and use simple search engines and directories—A.4.4
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- select more than one resource when appropriate—B.4.2
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

C.4.4 Use simple science equipment including rulers, balances, graduated cylinders, hand lenses, thermometers, and computers safely and effectively to collect data relevant to questions and investigations

- demonstrate proper care and correct use of media and equipment—A.4.1
- demonstrate the correct use of input devices (e.g., mouse, keyboard) and output devices (e.g., monitor, printer, speakers)—A.4.1
- develop touch keyboarding techniques using both hands—A.4.1
- save and backup files on a computer hard drive, storage medium, or server—A.4.1
- demonstrate the use of still and video cameras and scanners—A.4.1
- solve problems using the basic four arithmetic functions of a calculator when appropriate—A.4.1
- use a prepared database template to enter and edit data, and to locate records—A.4.3
- generate, send, retrieve, save, and organize electronic messages—A.4.4
- log on and view information from preselected sites on the Internet—A.4.4
- use the functions of a web browser to navigate and save World Wide Web sites—A.4.4
- identify and use simple search engines and directories—A.4.4

C.4.5 Use data they have collected to develop explanations and answer questions generated by investigations

- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

C.4.6 Communicate the results of their investigations in ways their audiences will understand by using charts, graphs, drawings, written descriptions, and various other means

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
- identify the audience for the product or presentation—B.4.7
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

C.4.7 Support their conclusions with logical arguments

C.4.8 Ask additional questions that might help focus or further an investigation

- seek additional information if needed—B.4.6

By the end of grade 8 students will:

C.8.1 Identify questions they can investigate using resources and equipment they have available

- identify the information problem or question to be resolved—B.8.1
- relate what is already known to the information need—B.8.1
- formulate general and specific research questions using a variety of questioning skills—B.8.1
- revise and narrow the information questions to focus on the information need—B.8.1
- focus search strategies on matching information needs with available resources—B.8.2

C.8.2 Identify data and locate sources of information including their own records to answer the questions being investigated

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- select multiple sources that reflect differing or supporting points of view—B.8.2

- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3
- search for information by subject, author, title, and keyword—B.8.3
- use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3

C.8.3 Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions

- focus search strategies on matching information needs with available resources—B.8.2

C.8.4 Use inferences to help decide possible results of their investigations, use observations to check their inferences

- formulate general and specific research questions using a variety of questioning skills—B.8.1

C.8.5 Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations

- analyze findings to determine need for additional information—B.8.6

C.8.6 State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected

- compare and integrate new information with prior knowledge—B.8.6

C.8.7 Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed

- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- draw conclusions to address the problem or question—B.8.6
- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

C.8.8 Use computer software and other technologies to organize, process, and present their data

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

C.8.9 Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations

C.8.10 Discuss the importance of their results and implications of their work with peers, teachers, and other adults

- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5

C.8.11 Raise further questions which still need to be answered

- analyze findings to determine need for additional information—B.8.6

By the end of grade 12 students will:

C.12.1 When studying science content, ask questions suggested by current social issues, scientific literature, and observations of phenomena; build hypotheses that might answer some of these questions; design possible investigations; and describe results that might emerge from such investigations

- state the information problem or question in clear and concise terms—B.12.1
- relate prior knowledge to the problem or question—B.12.1
- develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1
- conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

C.12.2 Identify issues from an area of science study, write questions that could be investigated, review previous research on these questions, and design and conduct responsible and safe investigations to help answer the questions

- relate prior knowledge to the problem or question—B.12.1
- develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1

C.12.3 Evaluate the data collected during an investigation, critique the data-collection procedures and results, and suggest ways to make any needed improvements

- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5
- credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- develop and apply criteria for judging success of learning projects—C.12.4

C.12.4 During investigations, choose the best data-collection procedures and materials available, use them competently, and calculate the degree of precision of the resulting data

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

C.12.5 Use the explanations and models found in the earth and space, life and environmental, and physical sciences to develop likely explanations for the results of their investigations

- relate prior knowledge to the problem or question—B.12.1
- develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1

C.12.6 Present the results of investigations to groups concerned with the issues, explaining the meaning and implications of the results, and answering questions in terms the audience can understand

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7

- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C.12.7 Evaluate articles and reports in the popular press, in scientific journals, on television, and on the Internet, using criteria related to accuracy, degree of error, sampling, treatment of data, and other standards of experimental design

- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

D. Physical Science

By the end of grade 4 students will:

D.4.1 Understand that objects are made of more than one substance, by observing, describing, and measuring the properties of earth materials, including properties of size, weight, shape, color, temperature, and the ability to react with other substances

D.4.2 Group and/or classify objects and substances based on the properties of earth materials

- use a prepared database template to enter and edit data, and to locate records—A.4.3
- use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
- organize information using simple outlining techniques—B.4.5

D.4.3 Understand that substances can exist in different states—solid, liquid, gas

D.4.4 Observe and describe changes in form, temperature, color, speed, and direction of objects and construct explanations for the changes

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5

D.4.5 Construct simple models of what is happening to materials and substances undergoing change, using simple instruments or tools to aid observations and collect data

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5

D.4.6 Observe and describe physical events in objects at rest or in motion

D.4.7 Observe and describe physical events involving objects and develop record-keeping systems to follow these events by measuring and describing changes in their properties, including position relative to another object, motion over time, and position due to forces

- use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5

D.4.8 Ask questions and make observations to discover the differences between substances that can be touched (matter) and substances that cannot be touched (forms of energy, light, heat, electricity, sound, and magnetism)

- identify the information problem or question to be resolved—B.4.1
- determine what is already known about the information problem or question—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1

By the end of grade 8 students will:

D.8.1 Observe, describe, and measure physical and chemical properties of elements and other substances to identify and group them according to properties such as density, melting points, boiling points, conductivity, magnetic attraction, solubility, and reactions to common physical and chemical tests

- use basic content-specific tools (e.g., environmental probes, measurement sensors) to provide evidence/support in a class project—A.8.1
- classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3

D.8.2 Use the major ideas of atomic theory and molecular theory to describe physical and chemical interactions among substances, including solids, liquids, and gases

D.8.3 Understand how chemical interactions and behaviors lead to new substances with different properties

D.8.4 While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges	
D.8.5 While conducting investigations, explain the motion of objects by describing the forces acting on them	• identify possible communication or production formats—B.8.7 • select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 • develop an original product or presentation which addresses the information problem or question—B.12.7
D.8.6 While conducting investigations, explain the motion of objects using concepts of speed, velocity, acceleration, friction, momentum, and changes over time, among others, and apply these concepts and explanations to real-life situations outside the classroom	• identify possible communication or production formats—B.8.7 • select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 • develop an original product or presentation which addresses the information problem or question—B.8.7
D.8.7 While conducting investigations of common physical and chemical interactions occurring in the laboratory and the outside world, use commonly accepted definitions of energy and the idea of energy conservation	• use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 • use an on-line catalog and other databases of print and electronic resources—B.8.3 • use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
D.8.8 Describe and investigate the properties of light, heat, gravity, radio waves, magnetic fields, electrical fields, and sound waves as they interact with material objects in common situations	
D.8.9 Explain the behaviors of various forms of energy by using the models of energy transmission, both in the laboratory and in real-life situations	• select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 • develop an original product or presentation which addresses the information problem or question—B.8.7
D.8.10 Explain how models of the atomic structure of matter have changed over time, including historical models and modern atomic theory	• compare and integrate new information with prior knowledge—B.8.6 • select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 • develop an original product or presentation which addresses the information problem or question—B.8.7

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By the end of grade 12 students will:

D.12.1 Describe atomic structure and the properties of atoms, molecules, and matter during physical and chemical interactions	• use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
D.12.2 Explain the forces that hold the atom together and illustrate how nuclear interactions change the atom	• determine the audience and purpose for communicating the information—B.12.7 • compare strengths and weaknesses of possible presentation methods and products—B.12.7 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
D.12.3 Explain exchanges of energy in chemical interactions and exchange of mass and energy in atomic/nuclear reactions	• determine the audience and purpose for communicating the information—B.12.7 • compare strengths and weaknesses of possible presentation methods and products—B.12.7 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
D.12.4 Explain how substances, both simple and complex, interact with one another to produce new substances	• determine the audience and purpose for communicating the information—B.12.7 • compare strengths and weaknesses of possible presentation methods and products—B.12.7 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
D.12.5 Identify patterns in chemical and physical properties and use them to predict likely chemical and physical changes and interactions	
D.12.6 Through investigations, identify the types of chemical interactions, including endothermic, exothermic, oxidation, photosynthesis, and acid/base reactions	
D.12.7 Qualitatively and quantitatively analyze changes in the motion of objects and the forces that act on them and represent analytical data both algebraically and graphically	• use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
D.12.8 Understand the forces of gravitation, the electromagnetic force, intermolecular force, and explain their impact on the universal system	

D.12.9 Describe models of light, heat, and sound and through investigations describe similarities and differences in the way these energy forms behave

D.12.10 Using the science themes, illustrate the law of conservation of energy during chemical and nuclear reactions

D.12.11 Using the science themes, explain common occurrences in the physical world

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.12 Using the science themes and knowledge of chemical, physical, atomic, and nuclear interactions, explain changes in materials, living things, earth's features, and stars

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

E. Earth and Space Science

By the end of grade 4 students will:

E.4.1 Investigate that earth materials are composed of rocks and soils and correctly use the vocabulary for rocks, minerals, and soils during these investigations

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

E.4.2 Show that earth materials have different physical and chemical properties, including the properties of soils found in Wisconsin

E.4.3 Develop descriptions of the land and water masses of the earth and of Wisconsin's rocks and minerals, using the common vocabulary of earth and space science

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3

E.4.4 Identify celestial objects (stars, sun, moon, planets) in the sky, noting changes in patterns of those objects over time

- log on and view information from preselected sites on the Internet—A.4.4
- locate information from preselected Internet sites and web pages—B.4.3

E.4.5 Describe the weather commonly found in Wisconsin in terms of clouds, temperature, humidity, and forms of precipitation, and the changes that occur over time, including seasonal changes

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

E.4.6 Using the science themes, find patterns and cycles in the earth's daily, yearly, and long-term changes

E.4.7 Using the science themes, describe resources used in the home, community, and nation as a whole

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5

E.4.8 Illustrate resources humans use in mining, forestry, farming, and manufacturing in Wisconsin and elsewhere in the world

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

By the end of grade 8 students will:

E.8.1 Using the science themes, explain and predict changes in major features of land, water, and atmospheric systems

E.8.2 Describe underlying structures of the earth that cause changes in the earth's surface

E.8.3 Using the science themes during investigations, describe climate, weather, ocean currents, soil movements, and changes in the forces acting on the earth

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network—A.8.4 connection to the Internet or other on-line information services—A.8.4
- view, print, save, and open a document from the Internet or other on-line sources—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- locate indicators of authority for all sources of information—B.8.4

E.8.4 Using the science themes, analyze the influence living organisms have had on the earth's systems, including their impact on the composition of the atmosphere and the weathering of rocks

- analyze information for relevance to the question—B.8.6

E.8.5 Analyze the geologic and life history of the earth, including change over time, using various forms of scientific evidence

- analyze information for relevance to the question—B.8.6

E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and nonrenewable resources

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4

- locate indicators of authority for all sources of information—B.8.4

E.8.7 Describe the general structure of the solar system, galaxies, and the universe, explaining the nature of the evidence used to develop current models of the universe

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3

E.8.8 Using past and current models of the structure of the solar system, explain the daily, monthly, yearly, and long-term cycles of the earth, citing evidence gained from personal observation as well as evidence used by scientists

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- compare and integrate new information with prior knowledge—B.8.6

By the end of grade 12 students will:

E. 12.1 Using the science themes, distinguish between internal energies (decay of radioactive isotopes, gravity) and external energies (sun) in the earth's systems and show how these sources of energy have an impact on those systems

E.12.2 Analyze the geochemical and physical cycles of the earth and use them to describe movements of matter

E.12.3 Using the science themes, describe theories of the origins and evolution of the universe and solar system, including the earth system as a part of the solar system, and relate these theories and their implications to geologic time on the earth

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

E.12.4 Analyze the benefits, costs, and limitations of past, present, and projected use of resources and technology and explain the consequences to the environment

- analyze data from a database and present conclusions in a document or report—A.12.3
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

E.12.5 Using the science themes, understand that the origin of the universe is not completely understood, but that there are current ideas in science that attempt to explain its origin

F. Life and Environmental Science

By the end of grade 4 students will:

F.4.1 Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive

F.4.2 Investigate how organisms, especially plants, respond to both internal cues (the need for water) and external cues (changes in the environment)

F.4.3 Illustrate the different ways that organisms grow through life stages and survive to produce new members of their type

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5

F.4.4 Using the science themes, develop explanations for the connections among living and nonliving things in various environments

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

By the end of grade 8 students will:

F.8.1 Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms

F.8.2 Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments

F.8.3 Differentiate between single-celled and multiple-celled organisms (including humans) through investigations, comparing the cell functions of specialized cells for each type of organism

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6

F.8.4 Investigate and explain that heredity is comprised of the characteristic traits found in genes within the cell of an organism

F.8.5 Show how different structures both reproduce and pass on characteristics of their group

F.8.6 Understand that an organism is regulated both internally and externally

F.8.7 Understand that an organism's behavior evolves through adaptation to its environment

F.8.8 Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet

F.8.9 Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species

- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

F.8.10 Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends

- construct a simple spreadsheet, enter data, and interpret the information—A.8.3

By the end of grade 12 students will:

F.12.1 Evaluate the normal structures and the general and special functions of cells in single-celled and multiple-celled organisms	
F.12.2 Understand how cells differentiate and how cells are regulated	
F.12.3 Explain current scientific ideas and information about the molecular and genetic basis of heredity	• determine the audience and purpose for communicating the information—B.12.7 • compare strengths and weaknesses of possible presentation methods and products—B.12.7 • select the most appropriate format for the product or presentation—B.12.7 • develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
F.12.4 State the relationships between functions of the cell and functions of the organism as related to genetics and heredity	• analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
F.12.5 Understand the theory of evolution, natural selection, and biological classification	
F.12.6 Using concepts of evolution and heredity, account for changes in species and the diversity of species, include the influence of these changes on science, e.g., breeding of plants or animals	• analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
F.12.7 Investigate how organisms both cooperate and compete in ecosystems	
F.12.8 Using the science themes, infer changes in ecosystems prompted by the introduction of new species, environmental conditions, chemicals, and air, water, or earth pollution	• analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 • interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 • synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

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F.12.9 Using the science themes, investigate energy systems (related to food chains) to show how energy is stored in food (plants and animals) and how energy is released by digestion and metabolism

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

F.12.10 Understand the impact of energy on organisms in living systems

F.12.11 Investigate how the complexity and organization of organisms accommodates the need for obtaining, transforming, transporting, releasing, and eliminating the matter and energy used to sustain an organism

F.12.12 Trace how the sensory and nervous systems of various organisms react to the internal and external environment and transmit survival or learning stimuli to cause changes in behavior or responses

G. Science Applications

By the end of grade 4 students will:

G.4.1 Identify the technology used by someone employed in a job or position in Wisconsin and explain how the technology helps

- identify and define basic computer terminology (e.g., software, hardware, cursor, startup/shutdown, storage medium, file, memory)—A.4.1
- identify and explain the functions of the components of a computer system (e.g., monitor, central processing unit, storage devices, keyboard, mouse, printer)—A.4.1
- identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2

G.4.2 Discover what changes in technology have occurred in a career chosen by a parent, grandparent, or an adult friend over a long period of time

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- select more than one resource when appropriate—B.4.2

- list steps to follow in carrying out the information search—B.4.2

G.4.3 Determine what science discoveries have led to changes in technologies that are being used in the workplace by someone employed locally

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- list steps to follow in carrying out the information search—B.4.2

G.4.4 Identify the combinations of simple machines in a device used in the home, the workplace, or elsewhere in the community

G.4.5 Ask questions to find answers about how devices and machines were invented and produced

- determine what is already known about the information problem or question—B.4.1
- formulate initial questions to define what additional information is needed—B.4.1

By the end of grade 8 students will:

G.8.1 Identify and investigate the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need

C.8.1 Pursue information related to various dimensions of personal well-being and academic success

- recognize that accurate and complete information is basic to sound decisions in both personal and academic pursuits—C.8.1
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

G.8.2 Explain how current scientific and technological discoveries have an influence on the work people do and how some of these discoveries also lead to new careers

G.8.3 Illustrate the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life

G.8.4 Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show how the design (or re-design) might work, including potential side-effects

G.8.5 Investigate a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction

G.8.6 Use current texts, encyclopedias, source books, computers, experts, the popular press, or other relevant sources to identify examples of how scientific discoveries have resulted in new technology

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3

G.8.7 Show evidence of how science and technology are interdependent, using some examples drawn from personally conducted investigations

By the end of grade 12 students will:

G.12.1 Identify personal interests in science and technology; account for implications that these interests might have for future education, and options to be considered

C.12.1 Pursue information related to various dimensions of personal well-being and academic success

- recognize that accurate and complete information is essential to sound decisions in personal, academic, and career pursuits—C.12.1
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

G.12.2 Design, build, evaluate, and revise models and explanations related to the earth and space, life and environmental, and physical sciences

G.12.3 Analyze the costs, benefits, or problems resulting from a scientific or technological innovation, including implications for the individual and the community

G.12.4 Show how a major scientific or technological change has had an impact on work, leisure, or the home

- produce a multimedia program using text, graphics, moving images, and sound—A.12.5
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2

G.12.5 Choose a specific problem in our society, identify alternative scientific or technological solutions to that problem and argue its merits

H. Science In Social and Personal Perspectives

By the end of grade 4 students will:

H.4.1 Describe how science and technology have helped, and in some cases hindered, progress in providing better food, more rapid information, quicker and safer transportation, and more effective health care

H.4.2 Using the science themes, identify local and state issues that are helped by science and technology and explain how science and technology can also cause a problem

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2

H.4.3 Show how science has contributed to meeting personal needs, including hygiene, nutrition, exercise, safety, and health care

- identify the audience for the product or presentation—B.4.7
- identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

H.4.4 Develop a list of issues that citizens must make decisions about and describe a strategy for becoming informed about the science behind these issues

By the end of grade 8 students will:

H.8.1 Evaluate the scientific evidence used in various media (for example, television, radio, Internet, popular press, and scientific journals) to address a social issue, using criteria of accuracy, logic, bias, relevance of data, and credibility of sources

- determine the purpose of a specific production or presentation—A.8.6
- describe the effectiveness of the media and technology used in a production or presentation—A.8.6
- differentiate between primary and secondary sources—B.8.4
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- locate indicators of authority for all sources of information—B.8.4
- identify the criteria to be used in judging both the product (or presentation) and the process—B.8.8
- determine how well research conclusions and product meet the original information need or question based on the identified criteria—B.8.8

H.8.2 Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision

- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7
- collaborate with others to identify information needs and seek solutions—D.8.1
- demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1

H.8.3 Understand the consequences of decisions affecting personal health and safety

By the end of grade 12 students will:

H.12.1 Using the science themes and knowledge of the earth and space, life and environmental, and physical sciences, analyze the costs, risks, benefits, and consequences of a proposal concerning resource management in the community and determine the potential impact of the proposal on life in the community and the region

- analyze data from a database and present conclusions in a document or report—A.12.3
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2

- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

H.12.2 Evaluate proposed policy recommendations (local, state, and/or national) in science and technology for validity, evidence, reasoning, and implications, both short and long term

- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- draw conclusions and support them with credible evidence—B.12.6

H.12.3 Show how policy decisions in science depend on many factors, including social values, ethics, beliefs, time-frames, and considerations of science and technology

H.12.4 Advocate a solution or combination of solutions to a problem in science or technology

- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

H.12.6 Evaluate data and sources of information when using scientific information to make decisions

- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

H.12.6 Evaluate data and sources of information when using scientific information to make decisions

- select information clearly related to the problem or question—B.12.4
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4

- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4

H.12.7 When making decisions, construct a plan that includes the use of current scientific knowledge and scientific reasoning

Social Studies

Content Standards:

A. Geography: People, Places, and Environments

B. History: Time, Continuity, and Change

C. Political Science and Citizenship: Power, Authority, Governance, and Responsibility

D. Economics: Production, Distribution, Exchange, Consumption

E. The Behavioral Sciences: Individuals, Institutions, and Society

A. Geography: People, Places, and Environments

By the end of grade 4 students will:

A.4.1 Use reference points, latitude and longitude, direction, size, shape, and scale to locate positions on various representations of the earth's surface

A.4.2 Locate on a map or globe physical features such as continents, oceans, mountain ranges, and land forms; natural features such as resources, flora, and fauna; and human features such as cities, states, and national borders

A.4.3 Construct a map of the world from memory, showing the location of major land masses, bodies of water, and mountain ranges

Information & Technology Literacy

Content Standards:

A. Media and Technology

B. Information and Inquiry

C. Independent Learning

D. The Learning Community

- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3

- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5

A.4.4 Describe and give examples of ways in which people interact with the physical environment, including use of land, location of communities, methods of construction, and design of shelters

- use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5
- create and present a short video or hypermedia program—A.4.5
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7
- identify topics of interest and seek relevant information about them—C.4.1

A.4.5 Use atlases, databases, grid systems, charts, graphs, and maps to gather information about the local community, Wisconsin, the United States, and the world

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- use a prepared database template to enter and edit data, and to locate records—A.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- recognize that graphics and images can be used to convey a message—B.4.4

A.4.6 Identify and distinguish between predictable environmental changes, such as weather patterns and seasons, and unpredictable changes, such as floods and droughts, and describe the social and economic effects of these changes

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

A.4.7 Identify connections between the local community and other places in Wisconsin, the United States, and the world

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- locate materials using the classification system of the school library media center—B.4.3

- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5

A.4.8 Identify major changes in the local community that have been caused by human beings, such as a construction project, a new highway, a building torn down, or a fire; discuss reasons for these changes; and explain their probable effects on the community and the environment

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- list steps to follow in carrying out the information search—B.4.2
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

A.4.9 Give examples to show how scientific and technological knowledge has led to environmental changes, such as pollution prevention measures, air-conditioning, and solar heating

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

By the end of grade 8 students will:

A.8.1 Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- use graphics software to import pictures, images, and charts into documents—A.8.3
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- compare and integrate new information with prior knowledge—B.8.6

A.8.2 Construct mental maps of selected locales, regions, states, and countries and draw maps from memory, representing relative location, direction, size, and shape

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5

A.8.3 Use an atlas to estimate distance, calculate scale, identify dominant patterns of climate and land use, and compute population density

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3

A.8.4 Conduct a historical study to analyze the use of the local environment in a Wisconsin community and to explain the effect of this use on the environment

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6

A.8.5 Identify and compare the natural resource bases of different states and regions in the United States and elsewhere in the world, using a statistical atlas, aerial photographs, satellite images, and computer databases

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- use graphics software to import pictures, images, and charts into documents—A.8.3
- classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3
- incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5

A.8.6 Describe and distinguish between the environmental effects on the earth of short-term physical changes, such as those caused by floods, droughts, and snowstorms, and long-term physical changes, such as those caused by plate tectonics, erosion, and glaciation

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5

A.8.7 Describe the movement of people, ideas, diseases, and products throughout the world

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5

A.8.8 Describe and analyze the ways in which people in different regions of the world interact with their physical environments through vocational and recreational activities

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5

A.8.9 Describe how buildings and their decoration reflect cultural values and ideas, providing examples such as cave paintings, pyramids, sacred cities, castles, and cathedrals

- scan, crop, and save a graphic using a scanner, digital camera, or other digitizing equipment—A.8.1
- use a graphics program to create or modify detail to an image or picture—A.8.2
- use graphics software to import pictures, images, and charts into documents—A.8.3
- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5

A.8.10 Identify major discoveries in science and technology and describe their social and economic effects on the physical and human environment

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6

A.8.11 Give examples of the causes and consequences of current global issues, such as the expansion of global markets, the urbanization of the developing world, the consumption of natural resources, and the extinction of species, and suggest possible responses by various individuals, groups, and nations

- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

By the end of grade 12 students will:

A.12.1 Use various types of atlases and appropriate vocabulary to describe the physical attributes of a place or region, employing such concepts as climate, plate tectonics, volcanism, and landforms, and to describe the human attributes, employing such concepts as demographics, birth and death rates, doubling time, emigration, and immigration

- analyze data from a database and present conclusions in a document or report—A.12.3
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- organize ideas, concepts, and issues in a manner appropriate to the subject and purpose—B.12.2
- determine when to use general or specialized print and electronic reference tools—B.12.3
- select information clearly related to the problem or question—B.12.4

A.12.2 Analyze information generated from a computer about a place, including statistical sources, aerial and satellite images, and three-dimensional models

- analyze data from a database and present conclusions in a document or report—A.12.3
- choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4
- distinguish between "pull" and "push" or "broadcast" methods of acquiring information from an on-line source—A.12.4
- establish access to primary sources and other experts for class reports or projects—A.12.4
- participate in an on-line discussion group or listserv appropriate to a content area—A.12.4
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4

A.12.3 Construct mental maps of the world and the world's regions and draw maps from memory showing major physical and human features

- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

A.12.4 Analyze the short-term and long-term effects that major changes in population in various parts of the world have had or might have on the environment

- analyze data from a database and present conclusions in a document or report—A.12.3
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

A.12.5 Use a variety of geographic information and resources to analyze and illustrate the ways in which the unequal global distribution of natural resources influences trade and shapes economic patterns

- analyze data from a database and present conclusions in a document or report—A.12.3
- establish access to primary sources and other experts for class reports or projects—A.12.4
- construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3
- use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- determine when to use general or specialized print and electronic reference determine when tools—B.12.3
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

A.12.6 Collect and analyze geographic information to examine the effects that a geographic or environmental change in one part of the world, such as volcanic activity, river diversion, ozone depletion, air pollution, deforestation, or desertification, may have on other parts of the world

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

A.12.7 Collect relevant data to analyze the distribution of products among global markets and the movement of people among regions of the world

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5
- credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- compile a bibliography in a format stipulated by an accepted manual of style—B.12.5

A.12.8 Identify the world's major ecosystems and analyze how different economic, social, political, religious, and cultural systems have adapted to them

- choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4
- establish access to primary sources and other experts for class reports or projects—A.12.4
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

A.12.9 Identify and analyze cultural factors, such as human needs, values, ideals, and public policies, that influence the design of places, such as an urban center, an industrial park, a public project, or a planned neighborhood

- choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4
- use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4
- establish access to primary sources and other experts for class reports or projects—A.12.4
- participate in an on-line discussion group or listserv appropriate to a content area—A.12.4
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

A.12.10 Analyze the effect of cultural ethics and values in various parts of the world on scientific and technological development

- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

A.12.11 Describe scientific and technological development in various regions of the world and analyze the ways in which development affects environment and culture

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

A.12.12 Assess the advantages and disadvantages of selected land use policies in the local community, Wisconsin, the United States, and the world

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6

A.12.13 Give examples and analyze conflict and cooperation in the establishment of cultural regions and political boundaries

B.12.5 Record and organize information

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

B.12.6 Interpret and use information to solve the problem or answer the question

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

B. History: Time, Continuity, and Change

By the end of grade 4 students will:

B.4.1 Identify and examine various sources of information that are used for constructing an understanding of the past, such as artifacts, documents, letters, diaries, maps, textbooks, photos, paintings, architecture, oral presentations, graphs, and charts

- identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2
- recognize the common organizational characteristics of print media (e.g., title page, table of contents, copyright statement, index)—A.4.2

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- identify a database and define basic database terms (e.g., file, record, field)—A.4.3
- identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3
- log on and view information from preselected sites on the Internet—A.4.4
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.4.2
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- differentiate between fiction and nonfiction resources—B.4.4
- recognize that graphics and images can be used to convey a message—B.4.4
- organize information using simple outlining techniques—B.4.5

B.4.2 Use a timeline to select, organize, and sequence information describing eras in history

B.4.3 Examine biographies, stories, narratives, and folk tales to understand the lives of ordinary and extraordinary people, place them in time and context, and explain their relationship to important historical events

- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- differentiate between fiction and nonfiction resources—B.4.4
- compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2
- identify new information and integrate it with prior knowledge—B.4.6

B.4.4 Compare and contrast changes in contemporary life with life in the past by looking at social, economic, political, and cultural roles played by individuals and groups

B.4.5 Identify the historical background and meaning of important political values such as freedom, democracy, and justice

D.4.4 Recognize the importance of intellectual freedom and access to information in a democratic society

- define the concept of intellectual freedom—D.4.4
- identify examples of censorship—D.4.4
- recognize the importance of free and open access to information for all citizens—D.4.4

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- acknowledge the right of classmates to express opinions different from their own—D.4.4
- describe situations or conditions where information is repressed or restricted—D.4.4

B.4.6 Explain the significance of national and state holidays, such as Independence Day and Martin Luther King, Jr. Day, and national and state symbols, such as the United States flag and the state flags

B.4.7 Identify and describe important events and famous people in Wisconsin and United States history

B.4.8 Compare past and present technologies related to energy, transportation, and communications, and describe the effects of technological change, either beneficial or harmful, on people and the environment

B.4.7 Communicate the results of research and inquiry in an appropriate format

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7
- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- take notes or record information in their own words—B.4.5

- arrange notes to help answer the information problem or question—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

B.4.9 Describe examples of cooperation and interdependence among individuals, groups, and nations

B.4.10 Explain the history, culture, tribal sovereignty, and current status of the American Indian tribes and bands in Wisconsin

- identify new information and integrate it with prior knowledge—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

By the end of grade 8 students will:

B.8.1 Interpret the past using a variety of sources, such as biographies, diaries, journals, artifacts, eyewitness interviews, and other primary source materials, and evaluate the credibility of sources used

- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- select multiple sources that reflect differing or supporting points of view—B.8.2
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- differentiate between primary and secondary sources—B.8.4
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- locate indicators of authority for all sources of information—B.8.4

B.8.2 Employ cause-and-effect arguments to demonstrate how significant events have influenced the past and the present in United States and world history

B.8.3 Describe the relationships between and among significant events, such as the causes and consequences of wars in United States and world history

- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5

B.8.4 Explain how and why events may be interpreted differently depending upon the perspectives of participants, witnesses, reporters, and historians

- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- select multiple sources that reflect differing or supporting points of view—B.8.2
- differentiate between primary and secondary sources—B.8.4
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- locate indicators of authority for all sources of information—B.8.4

B.8.5 Use historical evidence to determine and support a position about important political values, such as freedom, democracy, equality, or justice, and express the position coherently

- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- record concise notes in a prescribed manner, including bibliographic information—B.8.5
- cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7
- explain the concept of intellectual freedom—D.8.4
- recognize that the free-flow of information contributes to an informed citizenry resulting in sound decisions for the common good—D.8.4

B.8.6 Analyze important political values such as freedom, democracy, equality, and justice embodied in documents such as the Declaration of Independence, the United States Constitution, and the Bill of Rights

- explain the concept of intellectual freedom—D.8.4
- recognize that the free-flow of information contributes to an informed citizenry resulting in sound decisions for the common good—D.8.4

B.8.7 Identify significant events and people in the major eras of United States and world history

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3

B.8.8 Identify major scientific discoveries and technological innovations and describe their social and economic effects on society

- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- use basic search engines and directories to locate resources on a specific topic—A.8.4
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3

B.8.9 Explain the need for laws and policies to regulate science and technology

- determine the audience and purpose for the product or presentation—B.8.7

- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

B.8.10 Analyze examples of conflict, cooperation, and interdependence among groups, societies, or nations

- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- compare and integrate new information with prior knowledge—B.8.6
- analyze information for relevance to the question—B.8.6
- analyze findings to determine need for additional information—B.8.6
- gather and synthesize additional information as needed—B.8.6
- draw conclusions to address the problem or question—B.8.6

B.8.11 Summarize major issues associated with the history, culture, tribal sovereignty, and current status of the American Indian tribes and bands in Wisconsin

- use notetaking strategies including summarizing and paraphrasing—B.8.5
- compare and integrate new information with prior knowledge—B.8.6

B.8.12 Describe how history can be organized and analyzed using various criteria to group people and events chronologically, geographically, thematically, topically, and by issues

By the end of grade 12 students will:

B.12.1 Explain different points of view on the same historical event, using data gathered from various sources, such as letters, journals, diaries, newspapers, government documents, and speeches

- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4

- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

B.12.2 Analyze primary and secondary sources related to a historical question to evaluate their relevance, make comparisons, integrate new information with prior knowledge, and come to a reasoned conclusion

- establish access to primary sources and other experts for class reports or projects—A.12.4
- differentiate between primary and secondary sources—B.8.4
- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

B.12.3 Recall, select, and analyze significant historical periods and the relationships among them

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

B.12.4 Assess the validity of different interpretations of significant historical events

- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4

B.12.5 Gather various types of historical evidence, including visual and quantitative data, to analyze issues of freedom and equality, liberty and order, region and nation, individual and community, law and conscience, diversity and civic duty; form a reasoned conclusion in the light of other possible conclusions; and develop a coherent argument in the light of other possible arguments

- analyze data from a database and present conclusions in a document or report—A.12.3
- establish access to primary sources and other experts for class reports or projects—A.12.4
- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

B.12.6 Select and analyze various documents that have influenced the legal, political, and constitutional heritage of the United States

B.12.2 Develop information-seeking strategies

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2

B.12.3 Locate and access information sources

- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3

B.12.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

- select information clearly related to the problem or question—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4

B.12.5 Record and organize information

- credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

B.12.6 Interpret and use information to solve the problem or answer the question

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6

B.12.7 Identify major works of art and literature produced in the United States and elsewhere in the world and explain how they reflect the era in which they were created

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

B.12.8 Recall, select, and explain the significance of important people, their work, and their ideas in the areas of political and intellectual leadership, inventions, discoveries, and the arts, within each major era of Wisconsin, United States, and world history

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

B.12.9 Select significant changes caused by technology, industrialization, urbanization, and population growth, and analyze the effects of these changes in the United States and the world

- select information clearly related to the problem or question—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

B.12.10 Select instances of scientific, intellectual, and religious change in various regions of the world at different times in history and discuss the impact those changes had on beliefs and values

- select information clearly related to the problem or question—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

B.12.11 Compare examples and analyze why governments of various countries have sometimes sought peaceful resolution to conflicts and sometimes gone to war

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- draw conclusions and support them with credible evidence—B.12.6

B.12.12 Analyze the history, culture, tribal sovereignty, and current status of the American Indian tribes and bands in Wisconsin

- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

B.12.13 Analyze examples of ongoing change within and across cultures, such as the development of ancient civilizations; the rise of nation-states; and social, economic, and political revolutions

B.12.2 Develop information-seeking strategies

- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2

B.12.5 Record and organize information

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

B.12.6 Interpret and use information to solve the problem or answer the question

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

B.12.14 Explain the origins, central ideas, and global influence of religions, such as Buddhism, Islam, Hinduism, Judaism, and Christianity

B.12.2 Develop information-seeking strategies

- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2

B.12.5 Record and organize information

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

B.12.6 Interpret and use information to solve the problem or answer the question

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

B.12.7 Communicate the results of research and inquiry in an appropriate format

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7

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- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

B.12.15 Identify a historical or contemporary event in which a person was forced to take an ethical position, such as a decision to go to war, the impeachment of a president, or a presidential pardon, and explain the issues involved

- state the information problem or question in clear and concise terms—B.12.1
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- draw conclusions and support them with credible evidence—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

B.12.16 Describe the purpose and effects of treaties, alliances, and international organizations that characterize today's interconnected world

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

B.12.17 Identify historical and current instances when national interests and global interests have seemed to be opposed and analyze the issues involved

- develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1
- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- determine when to use general or specialized print and electronic reference tools—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6

B.12.18 Explain the history of slavery, racial and ethnic discrimination, and efforts to eliminate discrimination in the United States and elsewhere in the world

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C. Political Science and Citizenship: Power, Authority, Governance, and Responsibility

By the end of grade 4 students will:

C.4.1 Identify and explain the individual's responsibilities to family, peers, and the community, including the need for civility and respect for diversity

- share information and ideas with others—D.4.1
- respect the ideas of others—D.4.1
- articulate workgroup goals and individual responsibilities within the group—D.4.1
- participate in the development of individual and workgroup tasks and priorities—D.4.1
- recognize that individual achievement is linked to the successful completion of workgroup projects—D.4.1
- return all borrowed materials on time—D.4.2
- employ proper etiquette in all forms of communication—D.4.2
- recognize that altering or destroying another person's program or file constitutes unacceptable behavior—D.4.2
- differentiate between copying and summarizing—D.4.2
- recognize that using media and technology to defame another person or group constitutes unacceptable behavior—D.4.2
- recognize the need for privacy of personal information—D.4.2
- explain the concept of intellectual property rights—D.4.3
- describe how copyright protects the right of an author or producer to control the distribution, performance, display, or copying of original works—D.4.3
- recognize that the copying of commercial or licensed media is a violation of the copyright law—D.4.3
- identify violations of the copyright law as a crime for which there are serious consequences—D.4.3

- explain why the use of all or parts of another person's work requires prior permission or citation—D.4.3
- recognize that a quoted work must be stated in the author's exact words—D.4.3
- list sources quoted verbatim and visuals used in a presentation—D.4.3
- recognize that reports or articles they write must be put in their own words—D.4.3
- acknowledge the right of classmates to express opinions different from their own—D.4.4

C.4.2 Identify the documents, such as the Declaration of Independence, the Constitution, and the Bill of Rights, in which the rights of citizens in our country are guaranteed

- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3

C.4.3 Explain how families, schools, and other groups develop, enforce, and change rules of behavior and explain how various behaviors promote or hinder cooperation

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

C.4.4 Explain the basic purpose of government in American society, recognizing the three levels of government

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

C.4.5 Explain how various forms of civic action such as running for political office, voting, signing an initiative, and speaking at hearings, can contribute to the well-being of the community

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

C.4.6 Locate, organize, and use relevant information to understand an issue in the classroom or school, while taking into account the viewpoints and interests of different groups and individuals

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- evaluate possible sources based on currency, genre, and relevance to topic—B.4.2
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- take notes or record information in their own words—B.4.5

- record the sources of information as notes are taken—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- list basic bibliographic sources for information used—B.4.5
- identify materials that reflect diverse perspectives—C.4.3
- share information and ideas with others—D.4.1
- respect the ideas of others—D.4.1
- acknowledge the right of classmates to express opinions different from their own—D.4.4

By the end of grade 8 students will:

C.8.1 Identify and explain democracy's basic principles, including individual rights, responsibility for the common good, equal opportunity, equal protection of the laws, freedom of speech, justice, and majority rule with protection for minority rights

C.8.2 Identify, cite, and discuss important political documents, such as the Constitution, the Bill of Rights, and landmark decisions of the Supreme Court, and explain their function in the American political system

C.8.3 Explain how laws are developed, how the purposes of government are established, and how the powers of government are acquired, maintained, justified, and sometimes abused

D.8.4 Recognize the importance of intellectual freedom and access to information in a democratic society

- explain the concept of intellectual freedom—D.8.4
- identify examples and explain the implications of censorship in the United States and in other countries—D.8.4
- explain the importance of the principle of equitable access to information—D.8.4
- compare and contrast freedom of the press in different situations and geographic areas—D.8.4
- recognize that the free-flow of information contributes to an informed citizenry resulting in sound decisions for the common good—D.8.4
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5
- cite the source for words which are quoted verbatim and for pictures, graphics, and audio or video segments which are used in a product or presentation—D.8.3

B.8.7 Communicate the results of research and inquiry in an appropriate format

- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- develop an original product or presentation which addresses the information problem or question—B.8.7

C.8.4 Describe and explain how the federal system separates the powers of federal, state, and local governments in the United States, and how legislative, executive, and judicial powers are balanced at the federal level

B.8.5 Record and organize information

- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5

B.8.6 Interpret and use information to solve the problem or answer the question

- analyze information for relevance to the question—B.8.6
- draw conclusions to address the problem or question—B.8.6

B.8.7 Communicate the results of research and inquiry in an appropriate format

- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

C.8.5 Explain how the federal system and the separation of powers in the Constitution work to sustain both majority rule and minority rights

A.8.5 Use media and technology to create and present information

- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5

B.8.7 Communicate the results of research and inquiry in an appropriate format

- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

C.8.6 Explain the role of political parties and interest groups in American politics

C.8.7 Locate, organize, and use relevant information to understand an issue of public concern, take a position, and advocate the position in a debate

B.8.7 Communicate the results of research and inquiry in an appropriate format

- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7
- use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2
- access information using a modem or network connection to the Internet or other on-line information services—A.8.4
- locate materials using the classification systems of the school library media center and the public library—B.8.3
- use an on-line catalog and other databases of print and electronic resources—B.8.3
- recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3
- search for information by subject, author, title, and keyword—B.8.3
- use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3
- use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3
- use a search engine to locate appropriate Internet or Intranet resources—B.8.3
- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- locate indicators of authority for all sources of information—B.8.4
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- record sources of information in a standardized bibliographic format—B.8.5

- compare and integrate new information with prior knowledge—B.8.6
- analyze information for relevance to the question—B.8.6
- draw conclusions to address the problem or question—B.8.6

C.8.8 Identify ways in which advocates participate in public policy debates

C.8.9 Describe the role of international organizations such as military alliances and trade associations

By the end of grade 12 students will:

C.12.1 Identify the sources, evaluate the justification, and analyze the implications of certain rights and responsibilities of citizens

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- summarize how the basic principles of democracy relate to intellectual freedom—D.12.4

C.12.2 Describe how different political systems define and protect individual human rights

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

C.12.3 Trace how legal interpretations of liberty, equality, justice, and power, as identified in the United States Constitution, the Bill of Rights, and other United States Constitutional Amendments, have changed and evolved over time

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

C.12.4 Explain the multiple purposes of democratic government, analyze historical and contemporary examples of the tensions between those purposes, and illustrate how governmental powers can be acquired, used, abused, or legitimized

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C.12.5 Analyze different theories of how governmental powers might be used to help promote or hinder liberty, equality, and justice, and develop a reasoned conclusion

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- select information clearly related to the problem or question—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

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- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

C.12.6 Identify and analyze significant political benefits, problems, and solutions to problems related to federalism and the separation of powers

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

C.12.7 Describe how past and present American political parties and interest groups have gained or lost influence on political decision-making and voting behavior

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

C.12.8 Locate, organize, analyze, and use information from various sources to understand an issue of public concern, take a position, and communicate the position

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine and apply evaluative criteria to prioritizing potential sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3

- determine when to use general or specialized print and electronic reference tools—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- compile a bibliography in a format stipulated by an accepted manual of style—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C.12.9 Identify and evaluate the means through which advocates influence public policy

C.12.10 Identify ways people may participate effectively in community affairs and the political process

- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3

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- determine when to use general or specialized print and electronic reference tools—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3

C.12.11 Evaluate the ways in which public opinion can be used to influence and shape public policy

- gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

C.12.12 Explain the United States' relationship to other nations and its role in international organizations, such as the United Nations, North Atlantic Treaty Organization, World Bank, International Monetary Fund, and North American Free Trade Agreement

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C.12.13 Describe and evaluate ideas of how society should be organized and political power should be exercised, including the ideas of monarchism, anarchism, socialism, fascism, and communism; compare these ideas to those of representative democracy; and assess how such ideas have worked in practice

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

C.12.14 Explain and analyze how different political and social movements have sought to mobilize public opinion and obtain governmental support in order to achieve their goals

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

C.12.15 Describe and analyze the origins and consequences of slavery, genocide, and other forms of persecution, including the Holocaust

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

C.12.16 Describe the evolution of movements to assert rights by people with disabilities, ethnic and racial groups, minorities, and women

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

D. Economics: Production, Distribution, Exchange, Consumption

By the end of grade 4 students will:

D.4.1 Describe and explain of the role of money, banking, and savings in everyday life

- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- apply the information gathered to solve the information problem or question—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

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D.4.2 Identify situations requiring an allocation of limited economic resources and appraise the opportunity cost (for example, spending one's allowance on a movie will mean less money saved for a new video game)

D.4.3 Identify local goods and services that are part of the global economy and explain their use in Wisconsin

- identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3
- use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3
- apply the information gathered to solve the information problem or question—B.4.6
- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

D.4.4 Give examples to explain how businesses and industry depend upon workers with specialized skills to make production more efficient

D.4.5 Distinguish between private goods and services (for example, the family car or a local restaurant) and public goods and services (for example, the interstate highway system or the United States Postal Service)

D.4.6 Identify the economic roles of various institutions, including households, businesses, and government

- access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2
- log on and view information from preselected sites on the Internet—A.4.4
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- identify new information and integrate it with prior knowledge—B.4.6

D.4.7 Describe how personal economic decisions, such as deciding what to buy, what to recycle, or how much to contribute to people in need, can affect the lives of people in Wisconsin, the United States, and the world

- recognize that information can be used to make decisions or satisfy personal interest—C.4.1

By the end of grade 8 students will:

D.8.1 Describe and explain how money makes it easier to trade, borrow, save, invest, and compare the value of goods and services

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.2 Identify and explain basic economic concepts: supply, demand, production, exchange, and consumption; labor, wages, and capital; inflation and deflation; market economy and command economy; public and private goods and services

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- locate indicators of authority for all sources of information—B.8.4
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- identify possible communication or production formats—B.8.7

- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.3 Describe Wisconsin's role in national and global economies and give examples of local economic activity in national and global markets

- use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5
- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.4 Describe how investments in human and physical capital, including new technology, affect standard of living and quality of life

D.8.5 Give examples to show how government provides for national defense; health, safety, and environmental protection; defense of property rights; and the maintenance of free and fair market activity

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- define the purpose of copyright and copyright law—D.8.3

- identify what kinds of works of authorship can be copyrighted—D.8.3
- explain and differentiate the purposes of a patent, trademark, and logo—D.8.3

D.8.6 Identify and explain various points of view concerning economic issues, such as taxation, unemployment, inflation, the national debt, and distribution of income

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- select multiple sources that reflect differing or supporting points of view—B.8.2
- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate new information with prior knowledge—B.8.6
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.7 Identify the location of concentrations of selected natural resources and describe how their acquisition and distribution generates trade and shapes economic patterns

- plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2
- analyze and evaluate information presented in charts, graphs, and tables—B.8.4
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- analyze information for relevance to the question—B.8.6

D.8.8 Explain how and why people who start new businesses take risks to provide goods and services, considering profits as an incentive

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.9 Explain why the earning power of workers depends on their productivity and the market value of what they produce

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- compare and integrate new information with prior knowledge—B.8.6
- analyze information for relevance to the question—B.8.6
- draw conclusions to address the problem or question—B.8.6
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.10 Identify the economic roles of institutions such as corporations and businesses, banks, labor unions, and the Federal Reserve System

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5

D.8.11 Describe how personal decisions can have a global impact on issues such as trade agreements, recycling, and conserving the environment

By the end of grade 12 students will:

D.12.1 Explain how decisions about spending and production made by households, businesses, and governments determine the nation's levels of income, employment, and prices

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6
- determine the audience and purpose for communicating the information—B.12.7

- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.2 Use basic economic concepts (such as supply and demand; production, distribution, and consumption; labor, wages, and capital; inflation and deflation; market economy and command economy) to compare and contrast local, regional, and national economies across time and at the present time

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

D.12.3 Analyze and evaluate the role of Wisconsin and the United States in the world economy

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

D.12.4 Explain and evaluate the effects of new technology, global economic interdependence, and competition on the development of national policies and on the lives of individuals and families in the United States and the world

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

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D.12.5 Explain how federal budgetary policy and the Federal Reserve System's monetary policies influence overall levels of employment, interest rates, production, and prices

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.6 Use economic concepts to analyze historical and contemporary questions about economic development in the United States and the world

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

D.12.7 Compare, contrast, and evaluate different types of economies (traditional, command, market, and mixed) and analyze how they have been affected in the past by specific social and political systems and important historical events

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

D.12.8 Explain the basic characteristics of international trade, including absolute and comparative advantage, barriers to trade, exchange rates, and balance of trade

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- organize ideas, concepts, and issues in a manner appropriate to the subject and purpose—B.12.2
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7

- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.9 Explain the operations of common financial instruments (such as stocks and bonds) and financial institutions (such as credit companies, banks, and insurance companies)

- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.10 Analyze the ways in which supply and demand, competition, prices, incentives, and profits influence what is produced and distributed in a competitive market system

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

D.12.11 Explain how interest rates are determined by market forces that influence the amount of borrowing and saving done by investors, consumers, and government officials

- select information clearly related to the problem or question—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7

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- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.12 Compare and contrast how values and beliefs, such as economic freedom, economic efficiency, equity, full employment, price stability, security, and growth, influence decisions in different economic systems

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6

D.12.13 Describe and explain global economic interdependence and competition, using examples to illustrate their influence on national and international policies

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

D.12.14 Analyze the economic roles of institutions, such as corporations and businesses, banks, labor unions, and the Federal Reserve System

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

E. The Behavioral Sciences: Individuals, Institutions, and Society

By the end of grade 4 students will:

E.4.1 Explain the influence of prior knowledge, motivation, capabilities, personal interests, and other factors on individual learning

- identify new information and integrate it with prior knowledge—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7
- identify topics of interest and seek relevant information about them—C.4.1
- recognize that information can be used to make decisions or satisfy personal interest—C.4.1
- identify topics suitable for independent learning or in-depth exploration—C.4.4

E.4.2 Explain the influence of factors such as family, neighborhood, personal interests, language, likes and dislikes, and accomplishments on individual identity and development

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

E.4.3 Describe how families are alike and different, comparing characteristics such as size, hobbies, celebrations, where families live, and how they make a living

- plan a multimedia production using an outline or storyboard—A.4.5
- create and present a short video or hypermedia program—A.4.5
- take notes or record information in their own words—B.4.5
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

E.4.4 Describe the ways in which ethnic cultures influence the daily lives of people

- take notes or record information in their own words—B.4.5
- organize information using simple outlining techniques—B.4.5

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- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

E.4.5 Identify and describe institutions such as school, church, police, and family, and describe their contributions to the well being of the community, state, nation, and global society

- create and present a short video or hypermedia program—A.4.5
- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- locate materials using the classification system of the school library media center—B.4.3
- identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3
- search for information by keyword, author, title, and topic or subject—B.4.3
- use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3
- locate information from preselected Internet sites and web pages—B.4.3
- take notes or record information in their own words—B.4.5
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6

E.4.6 Give examples of group and institutional influences such as laws, rules, and peer pressure on people, events, and culture

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

E.4.7 Explain the reasons why individuals respond in different ways to a particular event and the ways in which interactions among individuals influence behavior

- identify the audience for the product or presentation—B.4.7
- identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

E.4.8 Describe and distinguish among the values and beliefs of different groups and institutions

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- identify the sponsoring organization or author for all resources—B.4.4
- take notes or record information in their own words—B.4.5
- record the sources of information as notes are taken—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6

E.4.9 Explain how people learn about others who are different from themselves

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

E.4.10 Give examples and explain how the media may influence opinions, choices, and decisions

- recognize that graphics and images can be used to convey a message—B.4.4
- recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3

E.4.11 Give examples and explain how language, stories, folk tales, music, and other artistic creations are expressions of culture and how they convey knowledge of other peoples and cultures

C.4.2 Appreciate and derive meaning from literature and other creative expressions of information

- choose fiction and other literature of personal interest—C.4.2
- relate literature and other creative expressions of information to personal experiences—C.4.2
- compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2

E.4.12 Give examples of important contributions made by Wisconsin citizens, United States citizens, and world citizens

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- take notes or record information in their own words—B.4.5
- record the sources of information as notes are taken—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5

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E.4.13 Investigate and explain similarities and differences in ways that cultures meet human needs

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- list steps to follow in carrying out the information search—B.4.2
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

E.4.14 Describe how differences in cultures may lead to understanding or misunderstanding among people

- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7
- identify materials that reflect diverse perspectives—C.4.3

E.4.15 Describe instances of cooperation and interdependence among individuals, groups, and nations, such as helping others in famines and disasters

- identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2
- list steps to follow in carrying out the information search—B.4.2
- take notes or record information in their own words—B.4.5
- arrange notes to help answer the information problem or question—B.4.5
- organize information using simple outlining techniques—B.4.5
- identify new information and integrate it with prior knowledge—B.4.6
- apply the information gathered to solve the information problem or question—B.4.6
- recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7
- choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7
- develop a product or presentation to communicate the results of the research—B.4.7

By the end of grade 8 students will:

E.8.1 Give examples to explain and illustrate the influence of prior knowledge, motivation, capabilities, personal interests, and other factors on individual learning	• identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 • compare and integrate information with prior knowledge—B.8.6 • recognize that accurate and complete information is basic to sound decisions in both personal and academic pursuits—C.8.1
E.8.2 Give examples to explain and illustrate how factors such as family, gender, and socioeconomic status contribute to individual identity and development	• identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 • use notetaking strategies including summarizing and paraphrasing—B.8.5 • organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 • analyze information for relevance to the question—B.8.6 • draw conclusions to address the problem or question—B.8.6
E.8.3 Describe the ways in which local, regional, and ethnic cultures may influence the everyday lives of people	• use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 • design and produce a multimedia program—A.8.5 • plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 • identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 • organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 • develop an original product or presentation which addresses the information problem or question—B.8.7
E.8.4 Describe and explain the means by which individuals, groups, and institutions may contribute to social continuity and change within a community	• identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 • use notetaking strategies including summarizing and paraphrasing—B.8.5 • organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 • determine the audience and purpose for the product or presentation—B.8.7 • identify possible communication or production formats—B.8.7 • select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

- develop an original product or presentation which addresses the information problem or question—B.8.7

E.8.5 Describe and explain the means by which groups and institutions meet the needs of individuals and societies

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6
- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

E.8.6 Describe and explain the influence of status, ethnic origin, race, gender, and age on the interactions of individuals

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6
- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7
- identify and select materials that reflect diverse perspectives—C.8.3

E.8.7 Identify and explain examples of bias, prejudice, and stereotyping, and how they contribute to conflict in a society

- distinguish between fact and opinion; recognize point of view or bias—B.8.4
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5

- compare and integrate information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6

E.8.8 Give examples to show how the media may influence the behavior and decision-making of individuals and groups

C.8.3 Develop competence and selectivity in reading, listening, and viewing

- recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3
- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6

E.8.9 Give examples of the cultural contributions of racial and ethnic groups in Wisconsin, the United States, and the world

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate information with prior knowledge—B.8.6
- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

E.8.10 Explain how language, art, music, beliefs, and other components of culture can further global understanding or cause misunderstanding

C.8.2 Appreciate and derive meaning from literature and other creative expressions of information

- identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2

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- relate literature and creative expressions of information to personal experiences—C.8.2
- relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2

E.8.11 Explain how beliefs and practices, such as ownership of property or status at birth, may lead to conflict among people of different regions or cultures and give examples of such conflicts that have and have not been resolved

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- use notetaking strategies including summarizing and paraphrasing—B.8.5
- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate information with prior knowledge—B.8.6
- draw conclusions to address the problem or question—B.8.6
- determine the audience and purpose for the product or presentation—B.8.7
- identify possible communication or production formats—B.8.7
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

E.8.12 Describe conflict resolution and peer mediation strategies used in resolving differences and disputes

E.8.13 Select examples of artistic expressions from several different cultures for the purpose of comparing and contrasting the beliefs expressed

- organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5
- compare and integrate information with prior knowledge—B.8.6

C.8.2 Appreciate and derive meaning from literature and other creative expressions of information

- relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2

E.8.14 Describe cooperation and interdependence among individuals, groups, and nations, such as helping others in times of crisis

- identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2
- select multiple sources that reflect differing or supporting points of view—B.8.2

- organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5
- compare and integrate information with prior knowledge—B.8.6
- select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7
- develop an original product or presentation which addresses the information problem or question—B.8.7

D.8.1 Participate productively in workgroups or other collaborative learning environments

- collaborate with others to identify information needs and seek solutions—D.8.1
- demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1
- determine workgroup goals and equitable distribution of individual or subgroup responsibilities and tasks—D.8.1
- plan for the efficient use and allocation of time—D.8.1
- complete workgroup projects on time—D.8.1
- evaluate completed projects to determine how the workgroup could have functioned more efficiently and productively—D.8.1

By the end of grade 12 students will:

E.12.1 Summarize research that helps explain how the brain's structure and function influence learning and behavior

- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

E.12.2 Explain how such factors as physical endowment and capabilities, family, gender, ethnicity, religion, socioeconomic status, attitudes, beliefs, work, and motivation contribute to individual identity and development

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5

- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

E.12.3 Compare and describe similarities and differences in the ways various cultures define individual rights and responsibilities, including the use of rules, folkways, mores, and taboos

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- select information in formats and genre most appropriate to content—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- identify and select materials that reflect diverse perspectives—C.12.3

E.12.4 Analyze the role of economic, political, educational, familial, and religious institutions as agents of both continuity and change, citing current and past examples

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
- select information clearly related to the problem or question—B.12.4
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5

- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

E.12.5 Describe the ways cultural and social groups are defined and how they have changed over time

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

E.12.6 Analyze the means by which and extent to which groups and institutions can influence people, events, and cultures in both historical and contemporary settings

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

E.12.7 Use scientific methods to assess the influence of media on people's behavior and decisions

- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- distinguish among fact, opinion, point of view, and inference—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3

E.12.8 Analyze issues of cultural assimilation and cultural preservation among ethnic and racial groups in Wisconsin, the United States, and the world

- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

E.12.9 Defend a point of view related to an ethical issue such as genetic engineering, declaring conscientious objector status, or restricting immigration

B.12.6 Interpret and use information to solve the problem or answer the question

- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- draw conclusions and support them with credible evidence—B.12.6

B.12.7 Communicate the results of research and inquiry in an appropriate format

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

E.12.10 Describe a particular culture as an integrated whole and use that understanding to explain its language, literature, arts, traditions, beliefs, values, and behaviors

- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- apply personal criteria for choosing literature and other creative expressions of information—C.12.2
- compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2

E.12.11 Illustrate and evaluate ways in which cultures resolve conflicting beliefs and practices

- use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5
- evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4
- determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- evaluate graphic images for misleading presentation and manipulated data—B.12.4
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5

- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6

E.12.12 Explain current and past efforts of groups and institutions to eliminate prejudice and discrimination against racial, ethnic, religious, and social groups such as women, children, the elderly, and individuals who are disabled

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2
- determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6
- determine the audience and purpose for communicating the information—B.12.7
- compare strengths and weaknesses of possible presentation methods and products—B.12.7
- select the most appropriate format for the product or presentation—B.12.7
- develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

E.12.13 Compare the ways in which a universal theme is expressed artistically in three different world cultures

- compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2

E.12.14 Use the research procedures and skills of the behavioral sciences (such as gathering, organizing, and interpreting data from several sources) to develop an informed position on an issue

B. Information And Inquiry

B.12.1 Define the need for information

B.12.2 Develop information-seeking strategies

B.12.3 Locate and access information sources

B.12.4 Evaluate and select information from a variety of print, nonprint, and electronic formats

B.12.6 Interpret and use information to solve the problem or answer the question

B.12.7 Communicate the results of research and inquiry in an appropriate format

B.12.8 Evaluate the information product and process

E.12.15 Identify the skills needed to work effectively alone, in groups, and in institutions

C.12.1 Pursue information related to various dimensions of personal well-being and academic success

- identify topics of interest and seek relevant information about them—C.12.1
- evaluate information for decision-making and personal interest—C.12.1
- recognize that accurate and complete information is essential to sound decisions in personal, academic, and career pursuits—C.12.1

C.12.4 Demonstrate self-motivation and increasing responsibility for their learning

- make decisions about group and classroom projects and learning objectives—C.12.4
- identify topics for independent study to meet individual learning needs and interests—C.12.4
- develop and apply criteria for judging success of learning projects—C.12.4
- establish goals, plans, budgets, and timelines for completing a project—C.12.4
- recognize gaps in personal knowledge and apply strategies for addressing them—C.12.4
- evaluate progress and quality of personal learning—C.12.4
- articulate personal goals in pursuit of individual interests, academic requirements, and career paths—C.12.4

D.12.1 Participate productively in workgroups or other collaborative learning environments

- collaborate with others to design and develop information products and solutions—D.12.1
- incorporate effective group processes and shared decision-making in project development—D.12.1
- specify and detail workgroup goals and individual and subgroup responsibilities—D.12.1
- finalize workgroup strategies, resources, budget, and timeline—D.12.1

- allocate time for a project based on an inventory of the responsibilities of workgroup members—D.12.1
- complete specific projects within a timeline and budget—D.12.1
- critique completed projects and workgroup processes for future improvement—D.12.1

E.12.16 Identify and analyze factors that influence a person's mental health

- locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3
- determine when to use general or specialized print and electronic reference tools—B.12.3
- compare, evaluate, and select appropriate Internet search engines and directories—B.12.3
- analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

E.12.17 Examine and describe various belief systems that exist in the world, such as democracy, socialism, and capitalism

- identify a full range of appropriate and available information from local, national, and global sources—B.12.2
- pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2
- organize ideas, concepts, and issues in a manner appropriate to the subject and purpose—B.12.2
- use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5
- organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5
- draw conclusions and support them with credible evidence—B.12.6

Matrix Model 2

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

A. Media and Technology

(By the end of Grade 4)

ITL Content Standard: Media and Technology

Students in Wisconsin will select and use media and technology to access, organize, create, and communicate information for solving problems and constructing new knowledge, products, and systems.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2 -recognize the common organizational characteristics of print media (e.g., title page, table of contents, copyright statement, index)—A.4.2 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.*	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **ITL Performance Indicators** -incorporate graphics, pictures, and sound into another document—A.4.2 -identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3 -use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **ITL Performance Indicators** -recognize the common organizational characteristics of print media (e.g., title page, table of contents, copyright statement, index)—A.4.2 -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **ITL Performance Indicators** -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -use a prepared database template to enter and edit data, and to locate records—A.4.3 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5 -create and present a short video or hypermedia program—A.4.5

English Language Arts	Mathematics	Science	Social Studies
ITL Performance Indicators -identify and define basic computer terminology (e.g., software, hardware, cursor, startup/shutdown, storage medium, file, memory)—A.4.1 -identify and explain the functions of the components of a computer system (e.g., monitor, central processing unit, storage devices, keyboard, mouse, printer)—A.4.1 -demonstrate the correct use of input devices (e.g., mouse, keyboard) and output devices (e.g., monitor, printer, speakers)—A.4.1 -develop touch keyboarding techniques using both hands—A.4.1 -save and backup files on a computer hard drive, storage medium, or server—A.4.1 -identify and define basic word processing terminology (e.g., cursor, open, save, file, I-beam, window, document, cut, copy, paste)—A.4.3 -produce a document using a word processing program—A.4.3 -edit a word-processed document using a spell checker—A.4.3 -demonstrate the text editing features of a word processing program (e.g., bold face, italics, underline, double spacing, different size and style of fonts) to produce a finished product—A.4.3	**B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **ITL Performance Indicators** -solve problems using the basic four arithmetic functions of a calculator when appropriate—A.4.1 **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.* **D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2	-log on and view information from preselected sites on the Internet—A.4.4 -identify and use simple search engines and directories—A.4.4 **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.* **ITL Performance Indicators** -demonstrate proper care and correct use of media and equipment—A.4.1 -demonstrate the correct use of input devices (e.g., mouse, keyboard) and output devices (e.g., monitor, printer, speakers)—A.4.1 -develop touch keyboarding techniques using both hands—A.4.1 -save and backup files on a computer hard drive, storage medium, or server—A.4.1 -demonstrate the use of still and video cameras and scanners—A.4.1 -solve problems using the basic four arithmetic functions of a calculator when appropriate—A.4.1 -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2	**B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2 -recognize the common organizational characteristics of print media (e.g., title page, table of contents, copyright statement, index)—A.4.2 -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -identify a database and define basic database terms (e.g., file, record, field)—A.4.3 -use a prepared database template to enter and edit data, and to locate records—A.4.3 -identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3 -log on and view information from preselected sites on the Internet—A.4.4

English Language Arts	Mathematics	Science	Social Studies
-explore special formatting features (e.g., borders, shading, centering, justification) of a word processing program—A.4.3 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **D. Language** Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English. **ITL Performance Indicators** -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 - edit a word-processed document using a spell checker—A.4.3 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** - identify and explain the functions of the components of a computer system (e.g., monitor, central processing unit, storage devices, keyboard, mouse, printer)—A.4.1	-use a prepared database template to enter and edit data, and to locate records—A.4.3 -identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3 -use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3 -log on and view information from preselected sites on the Internet—A.4.4 -use the functions of a web browser to navigate and save World Wide Web sites—A.4.4 -identify and use simple search engines and directories—A.4.4 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.* **ITL Performance Indicators** -incorporate graphics, pictures, and sound into another document—A.4.2	-use a prepared database template to enter and edit data, and to locate records—A.4.3 -log on and view information from preselected sites on the Internet—A.4.4 -identify and use simple search engines and directories—A.4.4 -use the functions of a web browser to navigate and save World Wide Web sites—A.4.4 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5 **D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **ITL Performance Indicators** -use a prepared database template to enter and edit data, and to locate records—A.4.3 -use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5	**C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **ITL Performance Indicators** -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -identify a spreadsheet and explain basic spreadsheet terms (e.g., column, row, cell)—A.4.3 -use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3 -log on and view information from preselected sites on the Internet—A.4.4

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English Language Arts	Mathematics	Science	Social Studies
-demonstrate proper care and correct use of media and equipment—A.4.1 -save and backup files on a computer hard drive, storage medium, or server—A.4.1 -demonstrate the use of still and video cameras and scanners—A.4.1 -operate basic audio and video equipment to listen to and view media programs—A.4.1 -differentiate among the common types of computer software (e.g., drawing programs, utilities, word processing, simulations)—A.4.2 -listen to and view common audio and video media—A.4.2 -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -describe the purpose and use of a virus detection program—A.4.2 -demonstrate how to open and run a software program from a local storage device or network server—A.4.2 -create, save, move, copy, retrieve, and delete electronic files—A.4.2 -incorporate graphics, pictures, and sound into another document—A.4.2	-use a prepared spreadsheet template to enter and edit data, and to produce and interpret a simple graph or chart—A.4.3 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5	**E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **ITL Performance Indicators** -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -log on and view information from preselected sites on the Internet—A.4.4 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5 **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **ITL Performance Indicators** -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5 **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.*	**E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -plan a multimedia production using an outline or storyboard—A.4.5 -create and present a short video or hypermedia program—A.4.5

English Language Arts	Mathematics	Science	Social Studies
-produce a document using a word processing program—A.4.3 -generate, send, retrieve, save, and organize electronic messages—A.4.4 -log on and view information from preselected sites on the Internet—A.4.4 -use the functions of a web browser to navigate and save World Wide Web sites—A.4.4 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5 -plan a multimedia production using an outline or storyboard—A.4.5 -create and present a short video or hypermedia program—A.4.5 -identify the media and technology used—A.4.6 -explain how well the media and technology contributed to its impact—A.4.6 -identify simple criteria for judging the quality of a production or presentation—A.4.6 -judge how well a particular production meets the identified criteria—A.4.6 -suggest ways to improve future productions or presentations—A.4.6		**ITL Performance Indicators** -identify and define basic computer terminology (e.g., software, hardware, cursor, startup/shutdown, storage medium, file, memory)—A.4.1 -identify and explain the functions of the components of a computer system (e.g., monitor, central processing unit, storage devices, keyboard, mouse, printer)—A.4.1 -identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2 **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	

English Language Arts	Mathematics	Science	Social Studies
F. Research and Inquiry *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -identify the wide variety of current media formats (e.g., video programs, magazines, computer software, audio cassettes, CD-ROM and DVD, newspapers, books, the Internet)—A.4.2 -access information using common electronic reference sources (e.g., indexes, almanacs, on-line catalogs, encyclopedias)—A.4.2 -incorporate graphics, pictures, and sound into another document—A.4.2 -use draw, paint or graphics software to create simple signs, posters, banners, charts, visuals, etc.—A.4.5			

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

B. Information and Inquiry

(By the end of Grade 4)

ITL Content Standard: Information and Inquiry

Students in Wisconsin will access, evaluate, and apply information efficiently and effectively from a variety of sources in print, nonprint, and electronic formats to meet personal and academic needs.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -select more than one resource when appropriate—B.4.2 -recognize that materials in the school library media center are organized in a systematic manner—B.4.3 -locate materials using the classification system of the school library media center—B.4.3	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems* **ITL Performance Indicators** -formulate initial questions to define what additional information is needed—B.4.1 -determine a specific focus for the information search questions—B.4.1 -recognize that materials in the school library media center are organized in a systematic manner—B.4.3	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.4.1 -determine what is already known about the information problem or question—B.4.1 -formulate initial questions to define what additional information is needed—B.4.1 -determine a specific focus for the information search questions—B.4.1	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments* **ITL Performance Indicators** -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -list steps to follow in carrying out the information search—B.4.2 -locate materials using the classification system of the school library media center—B.4.3

English Language Arts	Mathematics	Science	Social Studies
-identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -choose resources appropriate to their interests, abilities, and information need—B.4.4 -take notes or record information in their own words—B.4.5 -record the sources of information as notes are taken—B.4.5 -recognize the need to identify the author of any information copied verbatim—B.4.5 -arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5 -list basic bibliographic sources for information used—B.4.5 -identify new information and integrate it with prior knowledge—B.4.6 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.*	-locate materials using the classification system of the school library media center—B.4.3 -identify new information and integrate it with prior knowledge—B.4.6 -determine if information is relevant to the information question—B.4.6 -select information applicable to the information question—B.4.6 -seek additional information if needed—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7 **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.*	-identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -select more than one resource when appropriate—B.4.2 -list steps to follow in carrying out the information search—B.4.2 **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found* **ITL Performance Indicators** -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -locate materials using the classification system of the school library media center—B.4.3 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3	-identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -determine timeliness and validity of information sources—B.4.4 -recognize that graphics and images can be used to convey a message—B.4.4 -identify the sponsoring organization or author for all resources—B.4.4 -take notes or record information in their own words—B.4.5 -record the sources of information as notes are taken—B.4.5 -arrange notes to help answer the information problem or question—B.4.5 -list basic bibliographic sources for information used—B.4.5

English Language Arts	Mathematics	Science	Social Studies
ITL Performance Indicators -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -identify the audience for the product or presentation—B.4.7 -identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7 recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7	**ITL Performance Indicators** -locate materials using the classification system of the school library media center—B.4.3 **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems* **D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations* **ITL Performance Indicators** -identify new information and integrate it with prior knowledge—B.4.6 **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.4.1 -determine what is already known about the information problem or question—B.4.1 -formulate initial questions to define what additional information is needed—B.4.1	-use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -identify new information and integrate it with prior knowledge—B.4.6 **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.4.1 -determine what is already known about the information problem or question—B.4.1 -formulate initial questions to define what additional information is needed—B.4.1 -determine a specific focus for the information search questions—B.4.1 -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2	-identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -identify the audience for the product or presentation—B.4.7 -identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7 **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2

English Language Arts	Mathematics	Science	Social Studies
-develop a product or presentation to communicate the results of the research—B.4.7 -assess progress and quality of work—C.4.4 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -distinguish between fact and opinion—B.4.4 -identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -develop a product or presentation to communicate the results of the research—B.4.7 -review the criteria to be used in judging both the product (or presentation) and the process—B.4.8 -review the process based on the criteria—B.4.8 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.*	-identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -list steps to follow in carrying out the information search—B.4.2 -locate materials using the classification system of the school library media center—B.4.3 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -preview selected resources using table of contents, index, and other simple scanning strategies—B.4.4 -determine timeliness and validity of information sources—B.4.4	-select more than one resource when appropriate—B.4.2 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -identify new information and integrate it with prior knowledge—B.4.6 -seek additional information if needed—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -identify the audience for the product or presentation—B.4.7 -identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7 recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7	-locate materials using the classification system of the school library media center—B.4.3 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -preview selected resources using table of contents, index, and other simple scanning strategies—B.4.4 -differentiate between fiction and nonfiction resources—B.4.4 -distinguish between fact and opinion—B.4.4 -determine timeliness and validity of information sources—B.4.4 -recognize that graphics and images can be used to convey a message—B.4.4 -identify the sponsoring organization or author for all resources—B.4.4

English Language Arts	Mathematics	Science	Social Studies
ITL Performance Indicators -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -recognize that graphics and images can be used to convey a message—B.4.4 -identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7	-recognize that graphics and images can be used to convey a message—B.4.4 -identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.* **ITL Performance Indicators** -recognize different ways to organize ideas, concepts, and phrases—B.4.2 -recognize that graphics and images can be used to convey a message—B.4.4	**D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.4.1 determine what is already known about the information problem or question—B.4.1 -formulate initial questions to define what additional information is needed—B.4.1 -take notes or record information in their own words—B.4.5 -arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5 **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions* **ITL Performance Indicators** -locate materials using the classification system of the school library media center—B.4.3	-take notes or record information in their own words—B.4.5 -record the sources of information as notes are taken—B.4.5 -recognize the need to identify the author of any information copied verbatim—B.4.5 -arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5 -list basic bibliographic sources for information used—B.4.5 -identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7

English Language Arts	Mathematics	Science	Social Studies
F. Research and Inquiry *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.4.1 -determine what is already known about the information problem or question—B.4.1 -formulate initial questions to define what additional information is needed—B.4.1 -determine a specific focus for the information search questions—B.4.1 -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -select more than one resource when appropriate—B.4.2 -recognize that materials in the school library media center are organized in a systematic manner—B.4.3 -locate materials using the classification system of the school library media center—B.4.3		-identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment* **ITL Performance Indicators** -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7	**C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -locate materials using the classification system of the school library media center—B.4.3 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -take notes or record information in their own words—B.4.5

English Language Arts	Mathematics	Science	Social Studies
-identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -use the index or table of contents of a book, magazine, or reference set to locate specific information—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -preview selected resources using table of contents, index, and other simple scanning strategies—B.4.4 -identify the sponsoring organization or author for all resources—B.4.4 -take notes or record information in their own words—B.4.5 -record the sources of information as notes are taken—B.4.5 -recognize the need to identify the author of any information copied verbatim—B.4.5 -arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5		**G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **ITL Performance Indicators** -determine what is already known about the information problem or question—B.4.1 -formulate initial questions to define what additional information is needed—B.4.1 -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -select more than one resource when appropriate—B.4.2 -list steps to follow in carrying out the information search—B.4.2 **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live*	-arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5 -list basic bibliographic sources for information used—B.4.5 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **ITL Performance Indicators** -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -take notes or record information in their own words—B.4.5

English Language Arts	Mathematics	Science	Social Studies
-list basic bibliographic sources for information used—B.4.5 -identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -identify the audience for the product or presentation—B.4.7 -identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7		**ITL Performance Indicators** -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -evaluate possible sources based on currency, genre, and relevance to topic—B.4.2 -identify whether the purpose of the product or presentation is to inform, entertain, or persuade—B.4.7 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7	-arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5 -identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7 **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings*

English Language Arts	Mathematics	Science	Social Studies
			ITL Performance Indicators -identify possible sources of information including print, nonprint, electronic, and human resources—B.4.2 -list steps to follow in carrying out the information search—B.4.2 -locate materials using the classification system of the library media center—B.4.3 -identify and use printed or electronic catalogs to access materials in the school library media center—B.4.3 -search for information by keyword, author, title, and topic or subject—B.4.3 -use an encyclopedia, dictionary, almanac, and atlas in print or electronic formats—B.4.3 -locate information from preselected Internet sites and web pages—B.4.3 -recognize that graphics and images can be used to convey a message—B.4.4 -identify the sponsoring organization or author for all resources—B.4.4 -take notes or record information in their own words—B.4.5 -record the sources of information as notes are taken—B.4.5

English Language Arts	Mathematics	Science	Social Studies
			-arrange notes to help answer the information problem or question—B.4.5 -organize information using simple outlining techniques—B.4.5 -identify new information and integrate it with prior knowledge—B.4.6 -apply the information gathered to solve the information problem or question—B.4.6 -recognize the three common types of communication or presentation modes (written, oral, visual)—B.4.7 -choose a presentation format (e.g., speech, paper, web page, video, hypermedia)—B.4.7 -develop a product or presentation to communicate the results of the research—B.4.7

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

C. Independent Learning

(By the end of Grade 4)

ITL Content Standard: Independent Learning

Students in Wisconsin will apply information and technology skills to issues of personal and academic interest by actively and independently seeking information; demonstrating critical and discriminating reading, listening, and viewing habits; and, striving for personal excellence in learning and career pursuits.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -identify topics of interest and seek relevant information about them—C.4.1 -recognize that information can be used to make decisions or satisfy personal interest—C.4.1 -recognize that accurate information is basic to sound decisions—C.4.1 -choose fiction and other literature of personal interest—C.4.2 -recognize that award winning books reflect literary and artistic excellence—C.4.2	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **ITL Performance Indicators** -identify topics of interest and seek relevant information about them—C.4.1 **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **ITL Performance Indicators** -identify topics of interest and seek relevant information about them—C.4.1 **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2

English Language Arts	Mathematics	Science	Social Studies
-relate literature and other creative expressions of information to personal experiences—C.4.2 -compare their own interpretations of literature and other creative expressions of information with those of others—C.4.2 -choose materials at appropriate developmental levels—C.4.3 -identify materials that reflect diverse perspectives—C.4.3 -differentiate among written, oral, and visual forms of literature—C.4.3 -recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -identify topics suitable for independent learning or in-depth exploration—C.4.4 -apply prescribed criteria for judging success of learning projects—C.4.4 -establish goals and determine steps for completing a project—C.4.4 -assess progress and quality of work—C.4.4	**D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.*	**C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.* **ITL Performance Indicators** -identify topics of interest and seek relevant information about them—C.4.1 **D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.*	**C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -identify materials that reflect diverse perspectives—C.4.3 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **ITL Performance Indicators** -recognize that information can be used to make decisions or satisfy personal interest—C.4.1 **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -identify topics of interest and seek relevant information about them—C.4.1

English Language Arts	Mathematics	Science	Social Studies
C. Oral Language *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -contribute to group or classroom decisions about learning objectives—C.4.4 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -identify materials that reflect diverse perspectives—C.4.3 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3 **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.*		**G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	-recognize that information can be used to make decisions or satisfy personal interest—C.4.1 -recognize that media can be constructed to convey specific messages, viewpoints, and values—C.4.3 -identify topics suitable for independent learning or in-depth exploration—C.4.4

English Language Arts	Mathematics	Science	Social Studies
ITL Performance Indicators -identify topics suitable for independent learning or in-depth exploration—C.4.4 -apply prescribed criteria for judging success of learning projects—C.4.4 -establish goals and determine steps for completing a project—C.4.4 -assess progress and quality of work—C.4.4			

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

D. The Learning Community

(By the end of Grade 4)

ITL Content Standard: The Learning Community

Students in Wisconsin will demonstrate the ability to work collaboratively in teams or groups, use information and technology in a responsible manner, respect intellectual property rights, and recognize the importance of intellectual freedom and access to information in a democratic society.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -differentiate between copying and summarizing—D.4.2 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -recognize that reports or articles they write must be put in their own words—D.4.3	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -define the concept of intellectual freedom—D.4.4 -identify examples of censorship—D.4.4 -recognize the importance of free and open access to information for all citizens—D.4.4

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English Language Arts	Mathematics	Science	Social Studies
C. Oral Language *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -share information and ideas with others—D.4.1 -respect the ideas of others—D.4.1 -acknowledge the right of classmates to express opinions different from their own—D.4.4 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -differentiate between copying and summarizing—D.4.2 -explain the concept of intellectual property rights—D.4.3	**D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -recognize that a quoted work must be stated in the author's exact words—D.4.3 -list sources quoted verbatim and visuals used in a presentation—D.4.3 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.*	**D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	-acknowledge the right of classmates to express opinions different from their own—D.4.4 -describe situations or conditions where information is repressed or restricted—D.4.4 **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -share information and ideas with others—D.4.1 -respect the ideas of others—D.4.1 -articulate workgroup goals and individual responsibilities within the group—D.4.1 -participate in the development of individual and workgroup tasks and priorities—D.4.1 -recognize that individual achievement is linked to the successful completion of workgroup projects—D.4.1 -return all borrowed materials on time—D.4.2 -employ proper etiquette in all forms of communication—D.4.2

English Language Arts	Mathematics	Science	Social Studies
-describe how copyright protects the right of an author or producer to control the distribution, performance, display, or copying of original works—D.4.3 -explain why the use of all or parts of another person's work requires prior permission or citation—D.4.3 -recognize that a quoted work must be stated in the author's exact words—D.4.3 -list sources quoted verbatim and visuals used in a presentation—D.4.3 -recognize that reports or articles they write must be put in their own words—D.4.3			-recognize that altering or destroying another person's program or file constitutes unacceptable behavior—D.4.2 -differentiate between copying and summarizing—D.4.2 -recognize that using media and technology to defame another person or group constitutes unacceptable behavior—D.4.2 -recognize the need for privacy of personal information—D.4.2 -explain the concept of intellectual property rights—D.4.3 -describe how copyright protects the right of an author or producer to control the distribution, performance, display, or copying of original works—D.4.3 -recognize that the copying of commercial or licensed media is a violation of the copyright law—D.4.3 -identify violations of the copyright law as a crime for which there are serious consequences—D.4.3 -explain why the use of all or parts of another person's work requires prior permission or citation—D.4.3 -recognize that a quoted work must be stated in the author's exact words—D.4.3 -list sources quoted verbatim and visuals used in a presentation—D.4.3

English Language Arts	Mathematics	Science	Social Studies
			-recognize that reports or articles they write must be put in their own words—D.4.3 -acknowledge the right of classmates to express opinions different from their own—D.4.4 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.*

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

A. Media and Technology

(By the end of Grade 8)

ITL Content Standard: Media and Technology

Students in Wisconsin will select and use media and technology to access, organize, create, and communicate information for solving problems and constructing new knowledge, products, and systems.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 8 students will:	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -identify the various organizational patterns used in different kinds of reference books—A.8.2 -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **ITL Performance Indicators** -use graphics software to import pictures, images, and charts into documents—A.8.3 -use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3 -compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **ITL Performance Indicators** -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **ITL Performance Indicators** -scan, crop, and save a graphic using a scanner, digital camera, or other digitizing equipment—A.8.1 -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -use a graphics program to create or modify detail to an image or picture—A.8.2 -use graphics software to import pictures, images, and charts into documents—A.8.3

English Language Arts	Mathematics	Science	Social Studies
B. Writing *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -demonstrate touch keyboarding skills at acceptable speed and accuracy levels (suggested range 20-25 wpm)—A.8.1 -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -explain the use of basic word processing functions (e.g., menu, tool bars, dialog boxes, radio buttons, spell checker, thesaurus, page layout, headers and footers, word count, tabs)—A.8.3 -use the spell checker and thesaurus functions of a word processing program—A.8.3 -move textual and graphics data from one document to another—A.8.3 -use graphics software to import pictures, images, and charts into documents—A.8.3 -use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3	-incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **ITL Performance Indicators** -use simple graphing calculator functions to solve a problem—A.8.1 -construct a simple spreadsheet, enter data, and interpret the information—A.8.3 -plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3 **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	**C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.* **ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 **D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.*	-compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3 -classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3 -incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.*

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-compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3 -incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 -send an e-mail message with an attachment to several persons simultaneously—A.8.4 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -identify the various organizational patterns used in different kinds of reference books—A.8.2 -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2	**ITL Performance Indicators** -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 **D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3 -construct a simple spreadsheet, enter data, and interpret the information—A.8.3 -plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3 -incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5	**ITL Performance Indicators** -use basic content-specific tools (e.g., environmental probes, measurement sensors) to provide evidence/support in a class project—A.8.1 -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3 -incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -view, print, save, and open a document from the Internet or other on-line sources—A.8.4	**ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4 -demonstrate efficient Internet navigation—A.8.4 -organize World Wide Web bookmarks by subject or topic—A.8.4 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2

English Language Arts	Mathematics	Science	Social Studies
-use the spell checker and thesaurus functions of a word processing program—A.8.3 -determine the purpose of a specific production or presentation—A.8.6 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -identify and define computer and networking terms (e.g., modem, file server, client station, LAN, Internet/Intranet, data storage device)—A.8.1 -demonstrate the correct operation of a computer system on a network—A.8.1 -demonstrate touch keyboarding skills at acceptable speed and accuracy levels (suggested range 20-25 wpm)—A.8.1 -organize and backup files on a computer disk, drive, server, or other storage device—A.8.1 -recognize and solve routine computer hardware and software problems—A.8.1 -scan, crop, and save a graphic using a scanner, digital camera, or other digitizing equipment—A.8.1	-plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 -describe the effectiveness of the media and technology used in a production or presentation—A.8.6 -identify criteria for judging the technical quality of a production or presentation—A.8.6 -judge how well the production or presentation meets identified criteria—A.8.6 -recommend ways to improve future productions or presentations—A.8.6 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.* **ITL Performance Indicators** -use basic content-specific tools (e.g., environmental probes, measurement sensors) to provide evidence/support in a class project—A.8.1 -scan, crop, and save a graphic using a scanner, digital camera, or other digitizing equipment—A.8.1 -use simple graphing calculator functions to solve a problem—A.8.1	-use basic search engines and directories to locate resources on a specific topic—A.8.4 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **ITL Performance Indicators** -construct a simple spreadsheet, enter data, and interpret the information—A.8.3 **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4	-access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5

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-capture, edit, and combine video segments using a multimedia computer with editing software or a video editing system—A.8.1 -describe the operating and file management software of a computer (e.g., desktop, file, window, folder, directory, pull-down menu, dialog box)—A.8.2 -use a graphics program to create or modify detail to an image or picture—A.8.2 -use the spell checker and thesaurus functions of a word processing program—A.8.3 -move textual and graphics data from one document to another—A.8.3 -use graphics software to import pictures, images, and charts into documents—A.8.3 -use a graphical organizer program to construct outlines or webs that organize ideas and information—A.8.3 -compose a class report using advanced text formatting and layout styles (e.g., single and double spacing, different size and style of fonts, indents, headers and footers, pagination, table of contents, bibliography)—A.8.3 -classify collected data and construct a simple database by defining fields, entering and sorting data, and producing a report—A.8.3	-use graphics software to import pictures, images, and charts into documents—A.8.3 -plot and use different types of charts and graphs (e.g., line, bar, stacked, scatter diagram, area, pie charts, pictogram) from a spreadsheet program—A.8.3 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5	-use basic search engines and directories to locate resources on a specific topic—A.8.4 **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.* **ITL Performance Indicators** -determine the purpose of a specific production or presentation—A.8.6 -describe the effectiveness of the media and technology used in a production or presentation—A.8.6	**E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 -design and produce a multimedia program—A.8.5 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5

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-incorporate database and spreadsheet information (e.g., charts, graphs, lists) in word-processed documents—A.8.3 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -view, print, save, and open a document from the Internet or other on-line sources—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4 -demonstrate efficient Internet navigation—A.8.4 -organize World Wide Web bookmarks by subject or topic—A.8.4 -use draw, paint, or graphics software to create visuals that will enhance a class project or report—A.8.5 -design and produce a multimedia program—A.8.5 -plan and deliver a presentation using media and technology appropriate to topic, audience, purpose, or content—A.8.5 -describe the effectiveness of the media and technology used in a production or presentation—A.8.6 -identify criteria for judging the technical quality of a production or presentation—A.8.6			

English Language Arts	Mathematics	Science	Social Studies
-judge how well the production or presentation meets identified criteria—A.8.6 -recommend ways to improve future productions or presentations—A.8.6 **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -use electronic encyclopedias, almanacs, indexes, and catalogs to retrieve and select information—A.8.2 -access information using a modem or network connection to the Internet or other on-line information services—A.8.4 -view, print, save, and open a document from the Internet or other on-line sources—A.8.4 -use basic search engines and directories to locate resources on a specific topic—A.8.4 -demonstrate efficient Internet navigation—A.8.4 -organize World Wide Web bookmarks by subject or topic—A.8.4			

B. Information and Inquiry

(By the end of Grade 8)

ITL Content Standard: Information and Inquiry

Students in Wisconsin will access, evaluate, and apply information efficiently and effectively from a variety of sources in print, nonprint, and electronic formats to meet personal and academic needs.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 8 students will:	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2 -examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **ITL Performance Indicators** -formulate general and specific research questions using a variety of questioning skills—B.8.1 -revise and narrow the information questions to focus on the information need—B.8.1 -evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.8.1 -relate what is already known to the information need—B.8.1 -formulate general and specific research questions using a variety of questioning skills—B.8.1 -revise and narrow the information questions to focus on the information need—B.8.1	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -identify the classification system used in the school library media center, public library, and other local libraries—B.8.3 -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3

English Language Arts	Mathematics	Science	Social Studies
-differentiate between primary and secondary sources—B.8.4 -distinguish between fact and opinion; recognize point of view or bias—B.8.4 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -record concise notes in a prescribed manner, including bibliographic information—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -compare and integrate new information with prior knowledge—B.8.6 -analyze information for relevance to the question—B.8.6 -analyze findings to determine need for additional information—B.8.6 -gather and synthesize additional information as needed—B.8.6	-organize ideas, concepts, and phrases using webbing, outlines, trees, or other visual or graphic tools—B.8.2 -focus search strategies on matching information needs with available resources—B.8.2 -examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4 -differentiate between primary and secondary sources—B.8.4 -distinguish between fact and opinion; recognize point of view or bias—B.8.4 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5	-select multiple sources that reflect differing or supporting points of view—B.8.2 -compare and integrate new information with prior knowledge—B.8.6 **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **ITL Performance Indicators** -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -search for information by subject, author, title, and keyword—B.8.3 -use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3	-use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -compare and integrate new information with prior knowledge—B.8.6 -draw conclusions to address the problem or question—B.8.6 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7

English Language Arts	Mathematics	Science	Social Studies
-draw conclusions to address the problem or question—B.8.6 -determine the audience and purpose for the product or presentation—B.8.7 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3	-compare and integrate new information with prior knowledge—B.8.6 -analyze findings to determine need for additional information—B.8.6 -gather and synthesize additional information as needed—B.8.6 -draw conclusions to address the problem or question—B.8.6 -determine the audience and purpose for the product or presentation—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	-compare and integrate new information with prior knowledge—B.8.6 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.8.1 -relate what is already known to the information need—B.8.1 -formulate general and specific research questions using a variety of questioning skills—B.8.1 -revise and narrow the information questions to focus on the information need—B.8.1	**B History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2 -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4

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-use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -determine the audience and purpose for the product or presentation—B.8.7 -evaluate progress and quality of personal learning—C.8.4 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -select multiple sources that reflect differing or supporting points of view—B.8.2 -distinguish between fact and opinion; recognize point of view or bias—B.8.4	**D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.8.1 -relate what is already known to the information need—B.8.1 -formulate general and specific research questions using a variety of questioning skills—B.8.1 -revise and narrow the information questions to focus on the information need—B.8.1 -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2	-identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2 -focus search strategies on matching information needs with available resources—B.8.2 -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -search for information by subject, author, title, and keyword—B.8.3 -use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5	-differentiate between primary and secondary sources—B.8.4 -distinguish between fact and opinion; recognize point of view or bias—B.8.4 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -record concise notes in a prescribed manner, including bibliographic information—B.8.5 -cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -record sources of information in a standardized bibliographic format—B.8.5 -compare and integrate new information with prior knowledge—B.8.6

English Language Arts	Mathematics	Science	Social Studies
-determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -record sources of information in a standardized bibliographic format—B.8.5 -determine the audience and purpose for the product or presentation—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -determine the audience and purpose for the product or presentation—B.8.7	-identify and select keywords and phrases for each source, recognizing that different sources use different terminology for similar concepts—B.8.2 -organize ideas, concepts, and phrases using webbing, outlines, trees, or other visual or graphic tools—B.8.2 -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -search for information by subject, author, title, and keyword—B.8.3 -use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4 -differentiate between primary and secondary sources—B.8.4	-compare and integrate new information with prior knowledge—B.8.6 -analyze findings to determine need for additional information—B.8.6 -draw conclusions to address the problem or question—B.8.6 -determine the audience and purpose for the product or presentation—B.8.7 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **ITL Performance Indicators** -use an on-line catalog and other databases of print and electronic resources—B.8.3	-analyze information for relevance to the question—B.8.6 -analyze findings to determine need for additional information—B.8.6 -gather and synthesize additional information as needed—B.8.6 -draw conclusions to address the problem or question—B.8.6 -determine the audience and purpose for the product or presentation—B.8.7 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.*

English Language Arts	Mathematics	Science	Social Studies
-select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -evaluate possible sources of information based on criteria of timeliness, genre, point of view, bias, and authority—B.8.2 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3 -search for information by subject, author, title, and keyword—B.8.3 -use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3	-distinguish between fact and opinion; recognize point of view or bias—B.8.4 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -record concise notes in a prescribed manner, including bibliographic information—B.8.5 -cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -compare and integrate new information with prior knowledge—B.8.6 -analyze information for relevance to the question—B.8.6 -analyze findings to determine need for additional information—B.8.6 -gather and synthesize additional information as needed—B.8.6	-use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -compare and integrate new information with prior knowledge—B.8.6 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **ITL Performance Indicators** -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4	**ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3 bibliographic records, abstracts, or full text databases—B.8.3 -search for information by subject, author, title, and keyword—B.8.3 -use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4 -distinguish between fact and opinion; recognize point of view or bias—B.8.4

English Language Arts	Mathematics	Science	Social Studies
-distinguish between fact and opinion; recognize point of view or bias—B.8.4 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -determine the audience and purpose for the product or presentation—B.8.7 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -identify the information problem or question to be resolved—B.8.1 -relate what is already known to the information need—B.8.1 -formulate general and specific research questions using a variety of questioning skills—B.8.1	-draw conclusions to address the problem or question—B.8.6 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.* **ITL Performance Indicators** -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5	-analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -compare and integrate new information with prior knowledge—B.8.6 -analyze information for relevance to the question—B.8.6 **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **ITL Performance Indicators** -use an on-line catalog and other databases of print and electronic resources—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5	-determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -record sources of information in a standardized bibliographic format—B.8.5 -compare and integrate new information with prior knowledge—B.8.6 -analyze information for relevance to the question—B.8.6 -draw conclusions to address the problem or question—B.8.6 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7

English Language Arts	Mathematics	Science	Social Studies
-revise and narrow the information questions to focus on the information need—B.8.1 -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -focus search strategies on matching information needs with available resources—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2 -identify and select keywords and phrases for each source, recognizing that different sources use different terminology for similar concepts—B.8.2 -identify the classification system used in the school library media center, public library, and other local libraries—B.8.3 -locate materials using the classification systems of the school library media center and the public library—B.8.3 -use an on-line catalog and other databases of print and electronic resources—B.8.3 -recognize differences in searching bibliographic records, abstracts, or full text databases—B.8.3 -search for information by subject, author, title, and keyword—B.8.3		-compare and integrate new information with prior knowledge—B.8.6 -draw conclusions to address the problem or question—B.8.6 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7 **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **ITL Performance Indicators** -use an on-line catalog and other databases of print and electronic resources—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7	-develop an original product or presentation which addresses the information problem or question—B.8.7 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2 -examine selected resources for pertinent information using previewing techniques to scan for major concepts and keywords—B.8.4 -distinguish between fact and opinion; recognize point of view or bias—B.8.4 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4

English Language Arts	Mathematics	Science	Social Studies
-use Boolean operators with human or programmed guidance to narrow or broaden searches—B.8.3 -use biographical dictionaries, thesauri, and other common reference tools in both print and electronic formats—B.8.3 -use a search engine to locate appropriate Internet or Intranet resources—B.8.3 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -record concise notes in a prescribed manner, including bibliographic information—B.8.5 -cite the source of specific quotations or visuals using footnotes, endnotes, or internal citation formats—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -record sources of information in a standardized bibliographic format—B.8.5		-develop an original product or presentation which addresses the information problem or question—B.8.7 **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.* **ITL Performance Indicators** -differentiate between primary and secondary sources—B.8.4 -distinguish between fact and opinion; recognize point of view or bias—B.8.4 -determine if information is timely, valid, accurate, comprehensive, and relevant—B.8.4 -analyze and evaluate information presented in charts, graphs, and tables—B.8.4 -locate indicators of authority for all sources of information—B.8.4 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7	-use notetaking strategies including summarizing and paraphrasing—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -compare and integrate new information with prior knowledge—B.8.6 -analyze information for relevance to the question—B.8.6 -draw conclusions to address the problem or question—B.8.6 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7

English Language Arts	Mathematics	Science	Social Studies
-compare and integrate new information with prior knowledge—B.8.6 -analyze information for relevance to the question—B.8.6 -analyze findings to determine need for additional information—B.8.6 -gather and synthesize additional information as needed—B.8.6 -draw conclusions to address the problem or question—B.8.6 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7		-determine how well research conclusions and product meet the original information need or question based on the identified criteria—B.8.8	**E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -identify relevant sources of information including print, nonprint, electronic, human, and community resources—B.8.2 -select multiple sources that reflect differing or supporting points of view—B.8.2 -distinguish between fact and opinion; recognize point of view or bias—B.8.4 -use notetaking strategies including summarizing and paraphrasing—B.8.5 -organize and compare information using graphic organizers, storyboarding, and other relational techniques—B.8.5 -organize information in a systematic manner appropriate to question, audience, and intended format of presentation—B.8.5 -compare and integrate new information with prior knowledge—B.8.6

English Language Arts	Mathematics	Science	Social Studies
			-analyze information for relevance to the question—B.8.6 -draw conclusions to address the problem or question—B.8.6 -identify possible communication or production formats—B.8.7 -select a presentation format appropriate to the topic, audience, purpose, content, and technology available—B.8.7 -develop an original product or presentation which addresses the information problem or question—B.8.7

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

C. Independent Learning

(By the end of Grade 8)

ITL Content Standard: Independent Learning

Students in Wisconsin will apply information and technology skills to issues of personal and academic interest by actively and independently seeking information; demonstrating critical and discriminating reading, listening, and viewing habits; and, striving for personal excellence in learning and career pursuits.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 8 students will:	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -identify information appropriate for decision-making and personal interest—C.8.1 -identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2 -relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2 -choose materials at appropriate developmental levels—C.8.3 -identify and select materials that reflect diverse perspectives—C.8.3	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.*

English Language Arts	Mathematics	Science	Social Studies
-identify characteristics of common literary forms—C.8.3 -recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -participate in decisions about group and classroom projects and learning objectives—C.8.4 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3	**D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -establish goals and develop a plan for completing projects on time and within the scope of the assignment—C.8.4 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.*	**D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	**D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -recognize that accurate and complete information is basic to sound decisions in both personal and academic pursuits—C.8.1 -identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2 -relate literature and creative expressions of information to personal experiences—C.8.2 -relate literature and creative expressions of information to other literature or creative expressions of information—C.8.2 -identify and select materials that reflect diverse perspectives—C.8.3

English Language Arts	Mathematics	Science	Social Studies
E. Media and Technology *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -identify and use personal criteria for choosing literature and other creative expressions of information—C.8.2 -recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3 **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.*			-recognize how words, images, sounds, and illustrations can be constructed to convey specific messages, viewpoints, and values—C.8.3

D. The Learning Community

(By the end of Grade 8)

ITL Content Standard: The Learning Community

Students in Wisconsin will demonstrate the ability to work collaboratively in teams or groups, use information and technology in a responsible manner, respect intellectual property rights, and recognize the importance of intellectual freedom and access to information in a democratic society.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 8 students will:	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*	*By the end of Grade 8 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -collaborate with others to identify information needs and seek solutions—D.8.1	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -explain the concept of intellectual freedom—D.8.4 -recognize that the free-flow of information contributes to an informed citizenry resulting in sound decisions for the common good—D.8.4

English Language Arts	Mathematics	Science	Social Studies
-demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1 -cite the source for words which are quoted verbatim and for pictures, graphics, and audio or video segments which are used in a product or presentation—D.8.3 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -cite the source for words which are quoted verbatim and for pictures, graphics, and audio or video segments which are used in a product or presentation—D.8.3	**D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.*	**D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	**C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -cite the source for words which are quoted verbatim and for pictures, graphics, and audio or video segments which are used in a product or presentation—D.8.3 -explain the concept of intellectual freedom—D.8.4 -identify examples and explain the implications of censorship in the United States and in other countries—D.8.4 -explain the importance of the principle of equitable access to information—D.8.4 -compare and contrast freedom of the press in different situations and geographic areas—D.8.4 -recognize that the free-flow of information contributes to an informed citizenry resulting in sound decisions for the common good—D.8.4 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.*

English Language Arts	Mathematics	Science	Social Studies
		ITL Performance Indicators -collaborate with others to identify information needs and seek solutions—D.8.1 -demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1	**ITL Performance Indicators** -define the purpose of copyright and copyright law—D.8.3 -identify what kinds of works of authorship can be copyrighted—D.8.3 -explain and differentiate the purposes of a patent, trademark, and logo—D.8.3 **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -collaborate with others to identify information needs and seek solutions—D.8.1 -demonstrate acceptance to new ideas and strategies from workgroup members—D.8.1 -determine workgroup goals and equitable distribution of individual or subgroup responsibilities and tasks—D.8.1 -complete workgroup projects on time—D.8.1

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English Language Arts	Mathematics	Science	Social Studies
			-evaluate completed projects to determine how the workgroup could have functioned more efficiently and productively—D.8.1

A. Media and Technology

(By the end of Grade 12)

ITL Content Standard: Media and Technology

Students in Wisconsin will select and use media and technology to access, organize, create, and communicate information for solving problems and constructing new knowledge, products, and systems.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -demonstrate proper keyboarding mechanics and touch type accurately (suggested range 30-35 wpm)—A.12.1 -use an integrated program or applications suite to complete a class assignment—A.12.3	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **ITL Performance Indicators** -use an integrated program or applications suite to complete a class assignment—A.12.3 -manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3 -use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **ITL Performance Indicators** -analyze data from a database and present conclusions in a document or report—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3 -use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3 -choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4

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English Language Arts	Mathematics	Science	Social Studies
-proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3 -manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3 -use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3 -analyze data from a database and present conclusions in a document or report—A.12.3 -produce a multimedia program using text, graphics, moving images, and sound—A.12.5 -develop a document or file for inclusion into a website or web page—A.12.5 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **ITL Performance Indicators** -evaluate the appropriateness and effectiveness of the media and technology used—A.12.6 -determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6	-analyze data from a database and present conclusions in a document or report—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3 -use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3 -use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4 -participate in an on-line discussion group or listserv appropriate to a content area—A.12.4 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 -develop a document or file for inclusion into a website or web page—A.12.5 -participate in a desktop conferencing session to present and share information with others—A.12.5 **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.*	**D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **ITL Performance Indicators** -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **ITL Performance Indicators** -analyze data from a database and present conclusions in a document or report—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3 **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.*	-distinguish between "pull" and "push" or "broadcast" methods of acquiring information from an on-line source—A.12.4 -employ FTP (file transfer protocol) to retrieve and download computer files from a remote computer—A.12.4 -use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4 -establish access to primary sources and other experts for class reports or projects—A.12.4 -participate in an on-line discussion group or listserv appropriate to a content area—A.12.4 -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.*

English Language Arts	Mathematics	Science	Social Studies
-judge how well the production or presentation meets specified criteria—A.12.6 -specify ways to improve future productions or presentations—A.12.6 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -use an integrated program or applications suite to complete a class assignment—A.12.3 -proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3 -manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3 -use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 -develop a document or file for inclusion into a website or web page—A.12.5	**ITL Performance Indicators** -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4 **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.* **ITL Performance Indicators** -use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 **D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.ITL Performance Indicators*	**G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **ITL Performance Indicators** -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 -produce a multimedia program using text, graphics, moving images, and sound—A.12.5 **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.* **ITL Performance Indicators** -analyze data from a database and present conclusions in a document or report—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3	**ITL Performance Indicators** -analyze data from a database and present conclusions in a document or report—A.12.3 -establish access to primary sources and other experts for class reports or projects—A.12.4 -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4 **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.*

English Language Arts	Mathematics	Science	Social Studies
-assess the purpose and effectiveness of a production or presentation—A.12.6 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -demonstrate proper keyboarding mechanics and touch type accurately (suggested range 30-35 wpm)—A.12.1 -use a camcorder, VCR, multimedia computer, or editing equipment to produce a short video program—A.12.1 -use desktop or video conferencing equipment and systems—A.12.1 -demonstrate how to import and export text, graphic, and sound files—A.12.2 -edit, import, and export movie or video files—A.12.2 -use an integrated program or applications suite to complete a class assignment—A.12.3 -proofread and edit a document using the spell, thesaurus, and grammar checking functions of a word processing program—A.12.3	-use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3 -analyze data from a database and present conclusions in a document or report—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3 -use a computer and graphical organizer software to generate modifiable flow charts, project time lines, organizational charts, or calendars—A.12.3 -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 -produce a multimedia program using text, graphics, moving images, and sound—A.12.5 -develop a document or file for inclusion into a website or web page—A.12.5 -participate in a desktop conferencing session to present and share information with others—A.12.5		**E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5

English Language Arts	Mathematics	Science	Social Studies
-manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3 -use desktop publishing and graphics software to produce page layouts in different formats (e.g., brochure, tri-fold, newsletter)—A.12.3 -analyze data from a database and present conclusions in a document or report—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3 -choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4 -distinguish between "pull" and "push" or "broadcast" methods of acquiring information from an on-line source—A.12.4 -employ FTP (file transfer protocol) to retrieve and download computer files from a remote computer—A.12.4 -use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4 -establish access to primary sources and other experts for class reports or projects—A.12.4	**F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.* **ITL Performance Indicators** -demonstrate how to import and export text, graphic, and sound files—A.12.2 -manipulate graphics objects in a word processing program (e.g., select, move, modify, delete, duplicate, arrange)—A.12.3 -construct a spreadsheet, enter data into cells, use mathematical functions to manipulate/process data, generate a chart or graph, and interpret the results—A.12.3 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5		

English Language Arts	Mathematics	Science	Social Studies
-participate in an on-line discussion group or listserv appropriate to a content area—A.12.4 -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4 -use draw, paint, graphics, or presentation software to visually communicate ideas or concepts—A.12.5 -produce a multimedia program using text, graphics, moving images, and sound—A.12.5 -participate in a desktop conferencing session to present and share information with others—A.12.5 -evaluate the appropriateness and effectiveness of the media and technology used—A.12.6 -determine criteria for judging the delivery, pacing, focus, and technical quality of the production or presentation—A.12.6 -judge how well the production or presentation meets specified criteria—A.12.6 -specify ways to improve future productions or presentations—A.12.6			

English Language Arts	Mathematics	Science	Social Studies
F. Research and Inquiry *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -identify and explain the use of common microforms—A.12.2 -choose most appropriate search engines and directories to locate specific resources on the Internet or other on-line services—A.12.4 -employ FTP (file transfer protocol) to retrieve and download computer files from a remote computer—A.12.4 -use desktop conferencing, e-mail, or groupware to communicate with others regarding assignments or class projects—A.12.4 -establish access to primary sources and other experts for class reports or projects—A.12.4 -participate in an on-line discussion group or listserv appropriate to a content area—A.12.4 -gather and organize statistical or survey data using e-mail, listservs, or on-line news or discussion groups—A.12.4			

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

B. Information and Inquiry

(By the end of Grade 12)

ITL Content Standard: Information and Inquiry

Students in Wisconsin will access, evaluate, and apply information efficiently and effectively from a variety of sources in print, nonprint, and electronic formats to meet personal and academic needs.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -relate prior knowledge to the problem or question—B.12.1 -conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1 -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -determine and apply evaluative criteria to prioritizing potential sources—B.12.2	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **ITL Performance Indicators** -develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **ITL Performance Indicators** -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **ITL Performance Indicators** -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -organize ideas, concepts, and issues in a manner appropriate to the subject and purpose—B.12.2 -use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3

English Language Arts	Mathematics	Science	Social Studies
-pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6	-distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7	**B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **ITL Performance Indicators** -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	-determine when to use general or specialized print and electronic reference tools—B.12.3 -select information clearly related to the problem or question—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting –B.12.5 -follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 -credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5

English Language Arts	Mathematics	Science	Social Studies
-synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3 -use different search strategies for bibliographic citations, abstracts, and full-text resources in electronic formats—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -compare, evaluate, and select appropriate Internet search engines and directories—B.12.3	-develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **ITL Performance Indicators** -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.* **ITL Performance Indicators** -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 **D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.*	**ITL Performance Indicators** -state the information problem or question in clear and concise terms—B.12.1 -relate prior knowledge to the problem or question—B.12.1 -develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1 -conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1 -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -determine and apply evaluative criteria to prioritizing potential sources—B.12.2 -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4	-compile a bibliography in a format stipulated by an accepted manual of style—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -state the information problem or question in clear and concise terms—B.12.1 -develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1 -identify a full range of appropriate and available information from local, national, and global sources—B.12.2

English Language Arts	Mathematics	Science	Social Studies
-use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -evaluate progress and quality of personal learning—C.12.4 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.*	**E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -state the information problem or question in clear and concise terms—B.12.1 -relate prior knowledge to the problem or question—B.12.1 -develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1 -conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1 -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -determine and apply evaluative criteria to prioritizing potential sources—B.12.2 -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -identify and evaluate keywords, concepts, subject headings, and descriptors for each information source—B.12.2	-determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 -credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -compile a bibliography in a format stipulated by an accepted manual of style—B.12.5	-determine and apply evaluative criteria to prioritizing potential sources—B.12.2 -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -compare, evaluate, and select appropriate Internet search engines and directories—B.12.3 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4

English Language Arts	Mathematics	Science	Social Studies
ITL Performance Indicators -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5	-develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 -locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -compare, evaluate, and select appropriate Internet search engines and directories—B.12.3 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4	-interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **ITL Performance Indicators** -determine the audience and purpose for communicating the information—B.12.7	-evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6

English Language Arts	Mathematics	Science	Social Studies
-interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2	-use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -compile a bibliography in a format stipulated by an accepted manual of style—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7	-compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **ITL Performance Indicators** -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6	-determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **ITL Performance Indicators** -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

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-use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -determine the audience and purpose for communicating the information—B.12.7 **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3 -use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3	**F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.* **ITL Performance Indicators** -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5	-draw conclusions and support them with credible evidence—B.12.6 **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **ITL Performance Indicators** -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7	-locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -compare, evaluate, and select appropriate Internet search engines and directories—B.12.3 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4

English Language Arts	Mathematics	Science	Social Studies
-compare, evaluate, and select appropriate Internet search engines and directories—B.12.3 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.*		-develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **ITL Performance Indicators** -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	-use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7

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ITL Performance Indicators -state the information problem or question in clear and concise terms—B.12.1 -relate prior knowledge to the problem or question—B.12.1 -develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1 -conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1 -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 -identify the different classification systems used in local school, public and post-secondary libraries, and resource agencies—B.12.3 -locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3		**ITL Performance Indicators** -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -determine and apply evaluative criteria to prioritizing potential sources—B.12.2 -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4	-develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **ITL Performance Indicators** -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -organize ideas, concepts, and issues in a manner appropriate to the subject and purpose—B.12.2 -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2 -select information clearly related to the problem or question—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5

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English Language Arts	Mathematics	Science	Social Studies
-use increasingly complex organizational features of print and electronic resources such as cumulative and cross-database indexes—B.12.3 -use different search strategies for bibliographic citations, abstracts, and full-text resources in electronic formats—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -compare, evaluate, and select appropriate Internet search engines and directories—B.12.3 -use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -follow standardized notetaking processes and compile bibliographic information in an approved format—B.12.5 -credit sources for all quotations, visuals, major ideas, and specific facts or data using accepted citation formats—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5		-synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7	-analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

English Language Arts	Mathematics	Science	Social Studies
-organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -compile a bibliography in a format stipulated by an accepted manual of style—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7			**E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -develop specific research questions or a thesis statement based on the nature, purpose, and scope of project—B.12.1 -conduct a preliminary search to determine if the research questions or thesis statement is clear and searchable; refine and revise if necessary—B.12.1 -identify a full range of appropriate and available information from local, national, and global sources—B.12.2 -determine and apply evaluative criteria to prioritizing potential sources—B.12.2 -pursue a variety of resources reflecting differing points of view, cultures, and disciplines—B.12.2 -develop a plan to obtain needed information using a variety of research and investigative strategies (e.g., interviews, questionnaires, experiments, surveys)—B.12.2

English Language Arts	Mathematics	Science	Social Studies
			-locate information using the classification system and catalog in use at a variety of libraries and resource agencies—B.12.3 -construct effective electronic and manual searches using keywords, phrases, Boolean logic, and limiters—B.12.3 -determine when to use general or specialized print and electronic reference tools—B.12.3 -compare, evaluate, and select appropriate Internet search engines and directories—B.12.3 -select information clearly related to the problem or question—B.12.4 -evaluate information for stereotyping, prejudice, and misrepresentation—B.12.4 -distinguish among fact, opinion, point of view, and inference—B.12.4 -determine if sources are authoritative, valid, reliable, accurate, relevant, and comprehensive—B.12.4 -evaluate graphic images for misleading presentation and manipulated data—B.12.4 -determine authorship for all resources and identify points of agreement and disagreement among sources—B.12.4

English Language Arts	Mathematics	Science	Social Studies
			-use data-gathering strategies that include summarizing, paraphrasing, comparing, and quoting—B.12.5 -analyze and relate information using a variety of relational techniques (e.g., graphic organizers, database reports, spreadsheet charts, graphs)—B.12.5 -organize information in systematic manner for unity, coherence, clarity, and emphasis—B.12.5 -interpret new information to formulate ideas which address the question or problem using comparison, evaluation, inference, and generalization skills—B.12.6 -synthesize new ideas, evidence, and prior knowledge to address the problem or question—B.12.6 -draw conclusions and support them with credible evidence—B.12.6 -determine the audience and purpose for communicating the information—B.12.7 -compare strengths and weaknesses of possible presentation methods and products—B.12.7 -select the most appropriate format for the product or presentation—B.12.7 -develop a product or presentation that utilizes the strengths of the medium and supports the conclusions drawn in the research effort—B.12.7

English Language Arts	Mathematics	Science	Social Studies
			-establish the criteria to be used in judging both the product (or presentation) and the process—B.12.8 -assess how well the research conclusions and product satisfy the defined information need—B.12.8 -evaluate how the research question or problem, search strategy, resources, and interpretation could have been expanded or modified—B.12.8

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

C. Independent Learning
(By the end of Grade 12)

ITL Content Standard: Independent Learning

Students in Wisconsin will apply information and technology skills to issues of personal and academic interest by actively and independently seeking information; demonstrating critical and discriminating reading, listening, and viewing habits; and, striving for personal excellence in learning and career pursuits.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **ITL Performance Indicators** -recognize that core lists of classics and recommended titles for precollege reading provide for a well-rounded literary background—C.12.2 -apply personal criteria for choosing literature and other creative expressions of information—C.12.2 -relate literature and other creative expressions of information to personal experiences—C.12.2 -compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **ITL Performance Indicators** -choose materials at appropriate developmental levels—C.12.3 -evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **ITL Performance Indicators** -evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3

English Language Arts	Mathematics	Science	Social Studies
-evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3 **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -make decisions about group and classroom projects and learning objectives—C.12.4 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.* **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **ITL Performance Indicators** -evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3	**B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.* **D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **ITL Performance Indicators** -establish goals, plans, budgets, and timelines for completing a project—C.12.4 **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.*	**ITL Performance Indicators** -develop and apply criteria for judging success of learning projects—C.12.4 **D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **ITL Performance Indicators** -recognize that accurate and complete information is essential to sound decisions in personal, academic, and career pursuits—C.12.1	**C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.* **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -apply personal criteria for choosing literature and other creative expressions of information—C.12.2 -compare and contrast examples of literature and creative expressions of information with other examples of literature and creative expressions of information—C.12.2 -identify and select materials that reflect diverse perspectives—C.12.3

English Language Arts	Mathematics	Science	Social Studies
E. Media and Technology *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **ITL Performance Indicators** -evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3 **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -identify topics for independent study to meet individual learning needs and interests—C.12.4 -develop and apply criteria for judging success of learning projects—C.12.4 -establish goals, plans, budgets, and timelines for completing a project—C.12.4		**H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	-evaluate how words, images, sounds, and illustrations are constructed to convey specific messages, viewpoints, and values to shape attitudes and influence action—C.12.3 -make decisions about group and classroom projects and learning objectives—C.12.4 -identify topics for independent study to meet individual learning needs and interests—C.12.4 -develop and apply criteria for judging success of learning projects—C.12.4 -establish goals, plans, budgets, and timelines for completing a project—C.12.4 -recognize gaps in personal knowledge and apply strategies for addressing them—C.12.4 -evaluate progress and quality of personal learning—C.12.4 -articulate personal goals in pursuit of individual interests, academic requirements, and career paths—C.12.4

Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL)

D. The Learning Community

(By the end of Grade 12)

ITL Content Standard: The Learning Community

Students in Wisconsin will demonstrate the ability to work collaboratively in teams or groups, use information and technology in a responsible manner, respect intellectual property rights, and recognize the importance of intellectual freedom and access to information in a democratic society.

English Language Arts	Mathematics	Science	Social Studies
By the end of Grade 4 students will:	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*	*By the end of Grade 4 students will:*
A. Reading and Literature *Students in Wisconsin will read and respond to a wide range of writing to build an understanding of written materials, of themselves, and of others.* **B. Writing** *Students in Wisconsin will write clearly and effectively to share information and knowledge, to influence and persuade, to create and entertain.* **ITL Performance Indicators** -collaborate with others to design and develop information products and solutions—D.12.1 **C. Oral Language** *Students in Wisconsin will listen to understand and will speak clearly and effectively for diverse purposes.*	**A. Mathematical Processes** *Students in Wisconsin will draw on a broad body of mathematical knowledge and apply a variety of mathematical skills and strategies, including reasoning, oral and written communication, and the use of appropriate technology, when solving mathematical, real-world and nonroutine problems.* **B. Number Operations and Relationships** *Students in Wisconsin will use numbers effectively for various purposes, such as counting, measuring, estimating, and problem solving.* **C. Geometry** *Students in Wisconsin will be able to use geometric concepts, relationships and procedures to interpret, represent, and solve problems.*	**A. Science Connections** *Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.* **B. Nature of Science** *Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.* **C. Science Inquiry** *Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.*	**A. Geography** *Students in Wisconsin will learn about geography through the study of the relationships among people, places, and environments.* **B. History** *Students in Wisconsin will learn about the history of Wisconsin, the United States, and the world, examining change and continuity over time in order to develop historical perspective, explain historical relationships, and analyze issues that affect the present and the future.* **C. Political Science and Citizenship** *Students in Wisconsin will learn about political science and acquire the knowledge of political systems necessary for developing individual civic responsibility by studying the history and contemporary uses of power, authority, and governance.*

English Language Arts	Mathematics	Science	Social Studies
ITL Performance Indicators -incorporate effective group processes and shared decision-making in project development—D.12.1 **D. Language** *Students in Wisconsin will apply their knowledge of the nature, grammar, and variations of American English.* **E. Media and Technology** *Students in Wisconsin will use media and technology critically and creatively to obtain, organize, prepare and share information; to influence and persuade; and to entertain and be entertained.* **F. Research and Inquiry** *Students in Wisconsin will locate, use, and communicate information from a variety of print and nonprint materials.* **ITL Performance Indicators** -recognize the legal consequences of plagiarism and the need for personal authenticity in their work—D.12.3 -explain conditions under which permission must be obtained for the use of copyrighted materials—D.12.3 -describe how to correspond with authors, publishers, or producers to obtain permission to use copyrighted materials in their work—D.12.3	**D. Measurement** *Students in Wisconsin will select and use appropriate tools (including technology) and techniques to measure things to a specified degree of accuracy. They will use measurements in problem-solving situations.* **E. Statistics and Probability** *Students in Wisconsin will use data collection and analysis, statistics and probability in problem-solving situations, employing technology where appropriate.* **F. Algebraic Relationships** *Students in Wisconsin will discover, describe, and generalize simple and complex patterns and relationships. In the context of real-world problem situations, the student will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.*	**D. Physical Science** *Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.* **E. Earth and Space Science** *Students in Wisconsin will demonstrate an understanding of the structure and systems of the earth and other bodies in the universe and their interactions.* **F. Life and Environmental Science** *Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.* **G. Science Applications** *Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.* **H. Science in Social and Personal Perspectives** *Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.*	**ITL Performance Indicators** -summarize how the basic principles of democracy relate to intellectual freedom—D.12.4 **D. Economics** *Students in Wisconsin will learn about production, distribution, exchange, and consumption so that they can make informed economic decisions.* **E. The Behavioral Sciences** *Students in Wisconsin will learn about the behavioral sciences by exploring concepts from the discipline of sociology, the study of the interactions among individuals, groups, and institutions; the discipline of psychology, the study of factors that influence individual identity and learning; and the discipline of anthropology, the study of cultures in various times and settings.* **ITL Performance Indicators** -collaborate with others to design and develop information products and solutions—D.12.1 -incorporate effective group processes and shared decision-making in project development—D.12.1 -specify and detail workgroup goals and individual and subgroup responsibilities—D.12.1 -finalize workgroup strategies, resources, budget, and timeline—D.12.1

English Language Arts	Mathematics	Science	Social Studies
			-allocate time for a project based on an inventory of the responsibilities of workgroup members—D.12.1 -complete specific projects within a timeline and budget—D.12.1 -critique completed projects and workgroup processes for future improvement—D.12.1

Info/Tech

A Listing of Resources for Integrating Information and Technology Skills into Curriculum and Classroom Instruction

(lesson plans—publications—web sites—standards—technology planning—curriculum resources)

Index of Resource Providers (Listed by Type)

Associations

–National/International Associations

American Association of School Librarians (AASL)
Association for Educational Communications and Technology (AECT)
Association for Supervision and Curriculum Development (ASCD)
International Society for Technology in Education (ISTE)
National Council for the Social Studies (NCSS)
National Council of Teachers of English (NCTE)
National Council of Teachers of Mathematics (NCTM)
National School Boards Association Institute for the Transfer of Technology to Education (ITTE)
National Science Teachers Association (NSTA)

–State Associations

Wisconsin Association of Distance Education Networks (WADEN)
Wisconsin Association of School Librarians (WASL)
Wisconsin Council for the Social Studies (WCSS)
Wisconsin Council of Teachers of English Language Arts (WCTELA)
Wisconsin Council on Economic Education (WCEE)
Wisconsin Educational Media Association (WEMA)
Wisconsin Mathematics Council, Inc. (WMC)
Wisconsin Society of Science Teachers (WSST)
Wisconsin State Reading Association (WSRA)

Internet Sites

AskERIC: Educational Resources Information Center (ERIC)
Awesome Library
B. J. Pinchbeck's Homework Helper
Blue Web'n (Pacific Bell)
Busy Teachers' WebSite K-12
California Instructional Technology Clearinghouse
Canada's SchoolNet
CESA #8 Instructional Technology Page
Connecting Students Through Literacy
CyberGuides: Teacher Guides & Student Activities
Developing Educational Standards (Putnam Valley Central Schools)
Education World
EduScapes: A Site for Life-Long Learners
The Florida Instructional Technology Resource Center (ITRC)
The Gateway to Educational Materials (GEM)
HomeworkCentral.com
Intercultural E-Mail Classroom Connections (IECC)
K-12 Mathematics Curriculum Center
Kathy Schrock's Guide for Educators
Lesson Plans and Resources for Social Studies Teachers
Lightspan.com (The Lightspan Partnership)
LION: Librarians Information Online Network
MarcoPolo
The Math Forum
Michigan Teacher Network
Microsoft Classroom Teacher Network
National Aeronautics and Space Administration (NASA) Education Program
New Hampshire Educators Online
Pathways to School Improvement
Science Learning Network (SLN)
SciCentral: K-12 Science
Social Studies Sources
Study Web
TekMom
The Top 101 Web Sites for Teachers
The WebQuest Page

Journals/Periodicals

From Now On: The Educational Technology Journal (Jamie McKenzie)
Learning & Leading with Technology: Serving Teachers in the Classroom (ISTE)
MultiMedia Schools: A Practical Journal of Multimedia, CD-ROM, Online and Internet in K-12
Technology & Learning
T.H.E Journal: Technological Horizons in Education

Lesson Plan Sites

Apple Learning Interchange (Apple Computer, Inc.)
AskERIC: Educational Resources Information Center (ERIC)
Awesome Library
Blue Web'n (Pacific Bell)
Busy Teachers' WebSite K-12
CESA #8 Instructional Technology Page

Connecting Students Through Literacy
CyberGuides: Teacher Guides & Student Activities
Education World
The Eisenhower National Clearinghouse for Mathematics and Science Education (ENC)
The Gateway to Educational Materials (GEM)
HomeworkCentral.com

Lesson Plans and Resources for Social Studies Teachers
Lightspan.com (The Lightspan Partnership)
MarcoPolo
The Math Forum
Microsoft Classroom Teacher Network
SciCentral: K-12 Science
The WebQuest Page

Research Centers

–National Research Centers:

AskERIC: Educational Resources Information Center (ERIC)
Consortium for School Networking (CoSN)
Education Commission of the States (ECS)
The Eisenhower National Clearinghouse for Mathematics and Science Education (ENC)
K-12 Mathematics Curriculum Center
National Center for Technology Planning (NCTP)
U.S. Department of Education (DOE)

–Regional Research Centers:

Mid-Continent Research for Education and Learning (McREL)
NetTech: The Educational Technology Coordinator Website—www.nettech.org/tc/
North Central Regional Educational Laboratory (NCREL)
North Central Regional Technology in Education Consortium (NCRTEC)

Statewide Agencies

–State Agencies-Wisconsin

TEACH Wisconsin
Wisconsin Department of Public Instruction (DPI)
Wisconsin Educational Communications Board (ECB)

–State Agencies-Other States

California Instructional Technology Clearinghouse
The Florida Instructional Technology Resource Center (ITRC)
Michigan Department of Education
Michigan Teacher Network
New Hampshire Educators Online

Subject/Content Areas

–English Language Arts

Connecting Students Through Literacy
CyberGuides: Teacher Guides & Student Activities
National Council of Teachers of English (NCTE)
Wisconsin Council of Teachers of English Language Arts (WCTELA)
Wisconsin State Reading Association (WSRA)

–Mathematics

The Eisenhower National Clearinghouse for Mathematics and Science Education (ENC)
K-12 Mathematics Curriculum Center
The Math Forum
National Council of Teachers of Mathematics (NCTM)
Wisconsin Mathematics Council, Inc. (WMC)

–Science

The Eisenhower National Clearinghouse for Mathematics and Science Education (ENC)
National Aeronautics and Space Administration (NASA) Education Program
National Science Teachers Association (NSTA)
SciCentral: K-12 Science
Science Learning Network (SLN)
Wisconsin Society of Science Teachers (WSST)

–Social Studies

Lesson Plans and Resources for Social Studies Teachers
National Council for the Social Studies (NCSS)
Social Studies Sources
Wisconsin Council for the Social Studies (WCSS)
Wisconsin Council on Economic Education (WCEE)

Vendors

Apple Learning Interchange (Apple Computer, Inc.)
Blue Web'n (Pacific Bell)
Classroom Connect
IDE Corp.-Innovative Designs for Education
Lightspan.com (The Lightspan Partnership)
Microsoft Classroom Teacher Network
The Thornburg Center

Key Integration Information/Resources from Providers

American Association of School Librarians (AASL)—www.ala.org/aasl/index.html

The American Association of School Librarians is a Division of the American Library Association, and is interested in the general improvement and extension of library media services for children and young adults in elementary and secondary schools. The mission of AASL is to advocate excellence, facilitate change, and develop leaders in the school library media field.

Information Literacy Standards for Student Learning (national school library media standards)

- ideas on implementing the new information literacy standards including PowerPoint presentations
- publications and other resources dealing with information literacy
- electronic discussion lists
- "best practices" lessons and activities for school library media specialists
- ICONnect—online courses for library media specialists; student activities; online tours
- KidsConnect—Q &A referrel service for K-12 students to help them access information on the Internet

Apple Learning Interchange (Apple Computer, Inc.)—http://ali.apple.com/

The Apple Learning Interchange is a dynamic online community where educators share, learn and communicate. The site is sponsored by Apple Education (Apple Computer, Inc.).

- Units of Practice (UOP)—excellent lesson plans developed by experienced teachers that exemplify an approach to integrating technology into teaching and learning
- Find Like-Minded Members—forum lists of educators from your state or across the world
- electronic forums—The Math Room, Social Studies Corner, The Science Lab, Language Arts Round Table, Tech Talk, etc.
- projects for classes that want to collaborate with classes in other schools or in other countries
- staff development ideas and activities

AskERIC: Educational Resources Information Center (ERIC)—http://ericir.syr.edu/

ERIC is the Educational Resources Information Center, a federally-funded national information system that provides, through its 16 subject-centered clearinghouses, a variety of services and products on a broad range of education-related issues. AskERIC is a personalized Internet-based service providing education information to educators and others throughout the United States and the world. Today, AskERIC encompasses the resources of the entire ERIC system and beyond. Got an education question? AskERIC!

AskERIC Question & Answer Service-when you submit an education question to AskERIC, you'll receive a personal e-mail response from one of their network information specialists within two business days

- AskERIC Virtual Library—contains selected educational resources, including 1000+ lesson plans, 250+ AskERIC InfoGuides, searchable archives of education-related listservs, links to Television Series Companion Guides and more
- Search the ERIC Database—the world's largest source of education; database contains more than one million abstracts of documents and journal articles on education research and practice

Association for Educational Communications and Technology (AECT)—www.aect.org/

The mission of AECT is to provide leadership in educational communications and technology by linking professionals holding a common interest in the use of technology and its application to the learning process.

- Information Literacy Standards for Student Learning (national school library media standards)
- publications and journals dealing with educational media and technology
- electronic forums and listservs on educational media and technology

Association for Supervision and Curriculum Development (ASCD)—www.ascd.org/

ASCD is an international, nonprofit, nonpartisan education association committed to the mission of forging covenants

in teaching and learning for the success of all learners. ASCD provides professional development in curriculum and supervision; initiates and supports activities to provide educational equity for all students; and serves as a world-class leader in education information services.

- Professional Development Online—online courses for curriculum planners/leaders
- professional publications and multimedia dealing with curriculum leadership and planning
- general, topic and network electronic forums—(e.g., Technology in Schools)

Awesome Library—www.awesomelibrary.org/

Awesome Library organizes the Web with 14,000 carefully reviewed resources, including the Top 5 Percent in education.

- lesson plans in all subject areas
- technology and integrating technology sections are excellent
- information on copyright, acceptable use policies, professional development, software, standards, distance education, hardware, multimedia, clip art, web tools, etc.

B. J. Pinchbeck's Homework Helper—
www.bjpinchbeck.com/

A father and son web site providing links to educational sites of use to K-12 students. The site has received more than 110 web awards.

- hotlist of educational sites organized by subject areas

Blue Web'n (Pacific Bell)—
http://pomo.kn.pacbell.com/wired/bluewebn/

Blue Web'n is a searchable database of over 1000 outstanding Internet learning sites categorized by subject area, audience, and type of lessons. The site is sponsored by Pacific Bell.

- lists web based tutorials, activities, projects, lesson plans, hotlists, and references and tools for teachers
- Filamentality (a tool that turns existing web resources into activities for teachers)

Busy Teachers' WebSite K-12—
www.ceismc.gatech.edu/busyt/

A web site designed to provide educators with direct source material, lesson plans/classroom activities with a minimum of site-to-site linking, and to provide teachers with information on how to use the Internet for classroom instruction

- two sections to check—Interactive Web Projects and Computer Technology

California Instructional Technology Clearinghouse—http://clearinghouse.k12.ca.us/

The educator's guide to high quality instructional technology resources that support California's curriculum frameworks and standards

- database of more than 3,700 instructional resource evaluations and recommendations using descriptive criteria or content standards

Canada's SchoolNet—www.schoolnet.ca/

SchoolNet readies learners for the knowledge-based society. It champions life long learning and the creation of world class educational resources through information technology and partnerships. It is the official Government of Canada web site for Canadian schools at all levels.

- Learning Resources section includes the following categories under Curriculum Areas—Computer and Information Technology, Language Arts, Mathematics, Sciences, Social Sciences, Social Studies
- Learning Resources section includes the following under General Interest—Library, Multimedia Centre, Technology Support

CESA #8 Instructional Technology Page—
www.cesa8.k12.wi.us/it/index.html

A Cooperative Educational Service Agency located in the northeastern Wisconsin. The instructional technology page on this CESA web site has information and Internet links for instructional technology coordinators and library media specialists.

- WebFolio lessons created by Wisconsin teachers
- WebQuest lessons created by Wisconsin teachers
- lesson plan and other educational technology web site links

Classroom Connect—www.classroom.net/home.asp

The professional staff members at Classroom Connect work with educators in bringing the power of the Internet to their students. From their interactive Quest expeditions to their staff development resources, the Classroom Connect staff are committed to transforming K-12 education by helping teachers spark students' imaginations.

- excellent books and materials for teaching and learning using the Internet (e.g., *100 Activities for the Online Classroom*)
- Classroom Connect Newsletter—the premier guide to using the Internet in the classroom
- Connected Teacher Forums
- Connected Classroom Conferences
- online, interactive classroom projects you can join
- Connected University—online courses on how to incorporate the Internet in classroom activities/projects

Connecting Students Through Literacy—www.connectingstudents.com/literacy/

The purpose of this site is to provide teachers with links to content oriented sites students can use, educational interactive sites students can participate in, and Internet ready lesson plans.

- Internet lesson plans
- sites of value to English Language Arts teachers (Authors & Illustrators, Book Awards, Book Lists, etc.)

Consortium for School Networking (CoSN)—http://cosn.org/

CoSN, a non-profit organization, promotes the use of telecommunications in K-12 education to improve learning. Members represent state and local education agencies, nonprofits, companies and individuals who share our vision.

- highlights successful examples of school networking
- timely resources, publications and information on educational technology
- access to latest information on federal and state educational telecommunications efforts and funding
- online newsletter and electronic forums

CyberGuides: Teacher Guides & Student Activities—www.sdcoe.k12.ca.us/score/cyberguide.html

CyberGuides are supplementary, standards-based, web-delivered units of instruction centered on core works of literature. Each CyberGuide contains a student and teacher edition, standards, a task and a process by which it may be completed, teacher-selected web sites and a rubric, based on *California Language Arts Content Standards*.

- CyberGuides listed by Grades K-3, 4-5, 6-8, and 9-12

Developing Educational Standards (Putnam Valley Central schools)—http://putwest.boces.org/Standards.html

An annotated list of Internet sites with K-12 educational standards and curriculum framework documents. Putnam Valley Schools has established this page as a repository for as much information about educational standards and curriculum frameworks from all sources (national, state, local, and other) as can be found on the Internet.

- technology standards from various states, foreign countries, and professional associations

Education Commission of the States (ECS)—www.ecs.org/

The mission of ECS is to help state leaders identify, develop and implement public policy for education that addresses current and future needs of a learning society. To date, 49 states, the District of Columbia, Puerto Rico, American Samoa, and the Virgin Islands have passed legislation to join ECS.

- two significant K-12 technology initiatives in progress—Co-NECT and the Modern Red Schoolhouse

Education World—www.education-world.com/

Education World is the Educator's Complete Resource Guide to the Internet. Education World is a place where teachers can gather and share ideas, and a place where educators can find the lesson plans and research materials they need each day.

- contains a database of 120,000+ Internet sites complete with a search engine to search only those sites
- lesson plans for teachers organized by subject

BEST COPY AVAILABLE

- Technology in the Classroom—section with information about using technology in the classroom

EduScapes: A Site for Life-Long Learners—http://eduscapes.com/

A web site for teachers, parents, students and life-long learners of all ages. Annette Lamb and Larry Johnson designed this web site to share their own love of learning with others. As authors and educators, they work with teachers, parents and children around the world to effectively integrate technology into teaching and learning environments.

- Lamb's Technology Integration section provides useful resources for library media specialists and technology coordinators
- free online workshops dealing with technology integration
- publications and professional development services

The Eisenhower National Clearinghouse for Mathematics and Science Education—www.enc.org/nf_index.htm

The Eisenhower National Clearinghouse has put together one of the richest and most valuable instructional resources for math and science education on the Internet—and not just for standards and curriculum frameworks. Every visit reveals some new article, reference work, teaching idea, framework, or classroom activity for teachers.

- standards and curriculum frameworks for mathematics and science
- classroom activities, teacher ideas and lesson plans
- Digital Dozen—13 best math and science web sites each month
- extensive selection of journal articles from major educational, math and science magazines

The Florida Instructional Technology Resource Center (ITRC)—www.itrc.ucf.edu/

The ITRC is located in the Central Florida Research Park next to the University of Central Florida. The center provides information and resources on instructional technology for Florida's teachers.

- Technology Skills and the Sunshine State Standards—listing that identifies the PreK-12 Sunshine State Standards related to technology including links to appropriate software, lesson plans, and correlations to other technology standards
- TechHelp Now!--section designed to provide technical support to Florida's educational technicians
- Sunshine State Standards Web Resources—listing of web sites correlated to Florida's academic standards

From Now On: The Educational Technology Journal (Jamie McKenzie)—http://fno.org/

An educational technology journal for engaged learning enabling students to make up their own minds.

- thought provoking articles, presentations and publications of Jamie McKenzie focusing on the need for information and technology literacy competencies for K-12 students
- excellent professional development articles for getting teachers using technology in the classroom

The Gateway to Educational Materials (GEM)—www.thegateway.org

The GEM project is a consortium effort to provide educators with quick and easy access to the substantial, but uncataloged, collections of educational materials found on various federal, state, university, non-profit, and commercial Internet sites. GEM is a project of the U.S. Department of Education and is a special project of the ERIC Clearinghouse on Information & Technology.

- lesson plans for all K-12 subject areas and grade levels with many incorporating the use of technology
- excellent search engine to identify lesson plans for specific subjects and grade levels

IDE Corp.-Innovative Designs for Education—www.idecorp.com/

IDE Corp. is an educational consulting firm specializing in the role of technology in bringing about substantive instructional change.

- Technology Infusion TookKit 2000—a professional development CD with reflective journal to assist educators as they examine their paradigm of teaching and strive to infuse technology into their curriculum

Intercultural E-Mail Classroom Connections (IECC)—www.iecc.org

A free service to help teacher link w/partners in other countries and cultures for e-mail classroom pen-pal and project exchanges. Currently, 7,650 teachers are participating in 82 countries.

- IECC is intended for teachers at primary and secondary levels seeking partner classrooms for international and cross-cultural electronic mail exchanges
- IECC-HE is intended for teachers in higher education seeking partner classrooms for international and cross-cultural electronic mail exchanges
- IECC-INTERGEN is intended for teachers and "50+ volunteers" seeking intergenerational exchanges.
- IECC-PROJECTS is intended for teachers at all levels to announce and request help with specific, e-mail-based classroom projects
- IECC-SURVEYS is intended for students and teachers seeking assistance on short-term projects, "requests for greetings," surveys, and questionnaires
- IECC-DISCUSSION is intended for general discussion about questions, issues, and observations related to the use of electronic mail in intercultural classroom connections

International Society for Technology in Education (ISTE)—www.iste.org/

The mission of ISTE is to help K-12 teachers and administrators share effective methods for enhancing student learning through the use of new classroom technologies.

- National Educational Technology Standards for K-12 students (NETS Project)
- technology competencies required of new teachers
- Learning & Leading With Technology—technology journal for ISTE members
- hotlist of lesson plan and instructional software sites
- publications and materials about teaching with technology (e.g., *National Educational Standards for Students: Connecting Curriculum and Technology*)

HomeworkCentral.com—www.Homework Central.com

HomeworkCentral.com is a free online learning environment made up of the world's best links to knowledge on the Internet. Educational experts have located, evaluated, and organized more than 100,000 links in over 10,000 subjects, and are adding more every day.

- 14,000+ lesson plans arranged by grade and subject
- teacher resources and instructional activities
- assistive technology information

K-12 Mathematics Curriculum Center—www.edc.org/mcc/

The NSF-funded Mathematics Curriculum Center informs and assists school districts as they evaluate, select and implement standards-based mathematics curricula. The center provides seminars, resource guides, cases and other written material, referrals and phone consultations to help facilitate decision-making among stakeholders within a school district.

- written evaluations of standards-based science curricula and resources that come with the programs
- Curriculum Connections monthly newsletter

Kathy Schrock's Guide for Educators—http://school.discovery.com/schrockguide/

A categorized list of sites on the Internet found to be useful for enhancing curriculum and teacher professional growth. It is updated daily to include the best new sites to support teaching and learning.

- assessment rubrics section with ideas on how to measure the performance of student-created media and technology projects
- hotlist of best sites on the Internet for PK-12 educators

Learning & Leading with Technology: Serving Teachers in the Classroom (ISTE)—www.iste.org/

An educational technology journal published by ISTE and aimed at teachers using technology in the classroom.

- teacher/classroom ideas, software reviews, lesson plans/projects incorporating technology, etc.

Lesson Plans and Resources for Social Studies Teachers—www.csun.edu/~hcedu013/

A a website for social studies teachers containing a large compilation of social studies lesson plans and classroom activities from the Internet.

- comprehensive listing of newsgroups (electronic bulletin boards) on social studies issues
- links to national and regional social studies associations

Lightspan.com (The Lightspan Partnership)—www.lightspan.com/

A free web site for teachers, parents, and students that is a part of The Lightspan Partnership. The Lightspan Partnership is built on one idea: Finding ways to help children—everyone of them—perform at their very best.

- projects, lesson plans, tools and resources for teachers
- Global Schoolhouse collaborative learning projects
- classroom conferencing
- Homework Center

LION: Librarians Information Online Network—www.libertynet.org/lion/lion.html

LION is sponsored by Library Services of the School District of Philadelphia as an information resource for school librarians in Philadelphia and throughout the nation. The LION site map outlines more than 30 pages of information for media specialists.

- lessons and activities useful in school libraries, links to library and information skills curriculum documents, and related books and periodicals
- sections include—Automation for School Libraries, CD-ROMs for School Libraries, Publishers and Library-Related Vendors, Schools on the Internet, etc.

MarcoPolo—www.wcom.com/marcopolo/

The MarcoPolo program provides no-cost, standards-based Internet content for the K-12 teacher and classroom, developed by the nation's content experts. Online resources include panel-reviewed links to top sites in many disciplines and professionally developed lesson plans and classroom activities.

- lesson plans and expert-approved links for economics, geography, the humanities, mathematics and science; other subject areas will be added in the future.
- site includes the *Internet Content for the Classroom Teacher Training Kit*, a complete train-the-trainer guide for use by school and district level technology coordinators.

The Math Forum—http://forum.swarthmore.edu/

An online community of teachers, students, researchers, parents, educators, and citizens at all levels who have an interest in math and math education.

- Web Units & Lessons
- Ask Dr. Math
- Internet Mathematics Library
- Math Resources by Subject

Michigan Department of Education Content Standards—http://cdp.mde.state.mi.us/Technology/ITAC/

This section or page provides many of the technology initiatives of the Michigan Department of Education.

- Michigan Technology Content Standards and Benchmarks
- Instructional Technology Across the Curriculum (pdf file)

Michigan Teacher Network—http://mtn.merit.edu/

MTN supports Michigan k-12 educators in the successful use of technology by providing best practice, professional development, and evaluated curriculum resources.

- Making Technology Work section
- Technology Instruction section
- Media Center section

Microsoft Classroom Teacher Network—www.microsoft.com/education/mctn/default.asp

A web site for K-12 classroom teachers sponsored by Microsoft Corporation

- classroom-tested lesson plans incorporating technology
- Technology Planning Section
- Technical Resources Section

Mid-Continent Research for Education and Learning (McREL)—www.mcrel.org/

McREL is a private non-profit organization whose purpose is to improve education through applied research and development. McREL provides products and services, primarily for K-12 educators, to promote the best instructional practices in the classroom.

- compendium of standards and benchmarks for K-12 education
- publications dealing with standards, benchmarks and curriculum
- Internet Education Resources—database of online education-related resources
- Technology Integration—online resources on the implementation and use of technology in education
- Technology in Education—includes software reviews/information, Internet resources, funding sources, guides, organizations and technology research

MultiMedia Schools—
www.infotoday.com/MMSchools/

A practical how to magazine that addresses multiple technologies used in K-12 schools today—CD-ROM, multimedia, online, and Internet resources.

- articles, columns, news and product reviews contributed by practicing educators who use new technologies in the classroom and media center

National Aeronautics and Space Administration (NASA) Education Program—
http://education.nasa.gov/

NASA's Education homepage serves as the cyber-gateway to information regarding educational programs and services offered by NASA for educators and students across the United States.

- NASA Education Site Map—this area provides a quick overview of the layout of the entire NASA Education web site
- NASA Spacelink is the official home to electronic versions or NASA's Educational Products
- search engines available for those seeking information on specific topics or specific programs

National Center for Technology Planning (NCTP)—www.nctp.com/

NCTP is a clearinghouse for the exchange of many types of information related to technology planning.

- district and building technology plans available online for downloading
- technology planning articles
- technology planning aids, such as checklists, sample planning forms, brochures, etc.
- state technology plans and standards

National Council for the Social Studies (NCSS)—www.ncss.org/home.html

Social studies educators teach students the content knowledge, intellectual skills, and civic values necessary for fulfilling the duties of citizenship in a participatory democracy. The mission of NCSS is to provide leadership, service, and support for all social studies educators.

- Internet Resources & Links—listed by the 10 themes of the Curriculum Standards for Social Studies
- Teaching Resources—listed by the ten themes of the Curriculum Standards for Social Studies

National Council of Teachers of English (NCTE)—www.ncte.org/

NCTE is devoted to improving the teaching and learning of English and the language arts at all levels of education. NCTE provides a forum for the profession, an array of opportunities for teachers to continue their professional growth, and a framework for cooperation to deal with issues that affect the teaching of English.

- journals and publications about English Language Arts
- several e-mail forums are available to members

National Council of Teachers of Mathematics (NCTM)—www.nctm.org/

NCTM is dedicated to improving mathematics teaching and learning from preschool through postsecondary school. With about 110,000 members and more than 260 affiliated groups throughout the U.S. and Canada, NCTM is the world's largest mathematics education organization.

BEST COPY AVAILABLE

- NCTM Illuminations Web Site—part of the marcopolo program; site will include brief and extended lesson plans, expert-approved links to Internet sites, and powerful search engines
- NCTM Buyer's Guide Online—an easy and convenient way to find the right mathematics materials for your classroom

National School Boards Assn Institute for the Transfer of Technology to Education—www.nsba.org/itte/

ITTE's mission is to promote excellence and equity in education through the wise and innovative use of technology.

- Education Hotlinks
- Models of Success: Case Studies of Technology in Schools
- ITTE publications
- Technology Leadership Network (TLN)—the membership section or division of NSBA's Institute for the Transfer of Technology to Education
- TLN Best Practices Database & Leadership News Online

National Science Teachers Association (NSTA)—www.nsta.org/

The NSTA is the largest organization in the world committed to promoting excellence and innovation in science teaching and learning for all. NSTA publishes five journals, a newspaper, many books, and many other publications, and provides many programs and services to science educators, including awards, professional development workshops and conferences, and educational tours.

- NSTA Recommended Websites
- The NSTA Science Store Online
- National Science Education Standards (full-text online)
- Toshiba/NSTA Laptop Learning Challenge—teaching science, math and technology w/laptop computers

New Hampshire Educators Online—www.nheon.org/

NHEON is an educator's resource for curriculum planning and professional development. NHEON supports the proficiencies with the NH Curriculum Frameworks, hosts a showcase of best practices, and provides a forum for dialogue within the NH educational community.

- Educational Technology section under Curriculum Frameworks
- NH projects—some exciting projects using technology

North Central Regional Educational Laboratory (NCREL)—www.ncrel.org/

NCREL is a not-for-profit organization dedicated to helping schools—and the students they serve—reach their full potential. NCREL specializes in the educational applications of technology. One of ten regional educational laboratories, NCREL provides research-based resources and assistance to educators, policymakers and communities in Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin.

- NCREL Learning with Technology Profile Tool—this profile tool will help schools compare their current instructional practices with a set of indicators for engaged learning and high-performance technology. Amazing Picture Machine—This website helps educators find pictures, maps, and other graphic resources on the Internet. Included are sample lesson activities to give teachers ideas about how they can incorporate pictures in their own classrooms.
- Captured Wisdom CD-ROM Library—These CDs contain video descriptions and demonstrations of how technology is used in teachers' classrooms, and provides inspiration and insight into what technology can accomplish in your school.
- excellent publications (e.g., *Technology Connections for School Improvement Planners' Handbook*)

North Central Regional Technology in Education Consortium (NCRTEC)—www.ncrtec.org/

NCRTEC is a consortium in the North Central Regional Educational Laboratory whose mission is to assist schools and school districts to integrate technology in education in ways that lead to improved learning for all students.

- Handbook of Engaged Learning Projects—These classroom projects were designed by K-12 teachers to demonstrate engaged learning and effective use of technology.
- Learning through Dynamic Simulations—Models and simulations can help to understand physical phenomena. Each project has the following sections; introduction, overview, standards, students' page, teachers' page, evaluation, a model to download, and a link to software.
- Digital Video for Education—As video becomes more important for education, teachers need to know how to read, construct , and become masters of video technology. This site, created by NCRTEC and partner NCSA, is intended to provide help and tools in this field.
- note items listed above listed with North Central Regional Educational Laboratory (NCREL)

NetTech: The Educational Technology Coordinator Website—www.nettech.org/tc/

NetTech, the Northeast Regional Technology in Education Consortium, is a partnership designed to provide the vision, experience, and expertise needed to assist K-12 schools and other educational institutions in planning, implementing, continuously evaluating, and refining effective educational uses of technology. The site is designed by and for individuals who serve in the challenging task of coordinating technology initiatives in schools.

- sections include Curriculum Integration Issues, Professional Development, Technology in Context, and Technical Issues
- Curriculum Integration Issues section includes the following categories—Assessment & Evaluation, Lesson Plans, Resources General, Resources by Subject, Software & Book Reviews, Online Resources, Best Practices, Research, Grants, Journals, Listservs, and other Tech Coordinator Pages

Pathways to School Improvement—
www.ncrel.org/sdrs/pathways.htm

Pathways is a website sponsored by the North Central Regional Educational Laboratory (NCREL) and is designed primarily to help school improvement teams as they progress through the phases of the School Improvement Cycle. Pathways focuses on meaningful, engaged learning for K-12 students.

- "Critical Issues" documents on many educational topics
- content area sections with links to resources, classroom activities and teacher-created lesson plans
- school and district technology plans
- articles and documents on technology integration

SciCentral: K-12 Science—
www.scicentral.com/K-12/index.html

The SciCentral web site contains the best science internet resources and late-breaking research results in the world of science.

- Science lesson plans and experiments on all areas of K-12 Science
- Ask a Scientist
- Science Fair Projects and Competitions
- Science Internet links and web sites

Science Learning Network (SLN)—www.sln.org/

SLN is an online community of educators, students, schools, science museums and other institutions demonstrating a new model for inquiry science education. The site is funded by the National Science Foundation and Unisys Corporation.

- information on inquiry-based approaches to teaching science
- Internet/WWW content resources
- science museum projects

Social Studies Sources—
http://education.indiana.edu/~socialst/
A web site designed primarily for K-12 social studies teachers and students. It also has information and topics that are useful to pre-service social studies instructors and students.

- hotlist of social studies web sites
- links to social studies lesson and project sites

Study Web—www.studyweb.com/

Study Web is a place for K-12 teachers and students doing research to find the information they need as easily as possible. The research sites are sorted by subject and approximate appropriate grade level which make it easy for teachers looking for lesson plan and curriculum ideas.

- 118,000 educator evaluated research sites

TEACH Wisconsin—
www.teachwi.state.wi.us/index.html

The Technology for Educational Achievement (TEACH) initiative was signed into law in 1997. The objectives of TEACH Wisconsin are to assist Wisconsin's schools and libraries in achieving access to educational technology, to develop a statewide education network using Internet services and distance learning, to advance the educational technology priorities of each school district, and to enhance the technical skills of school district, CESA and public library staffs.

- affordable telecommunications access for all Wisconsin schools
- wiring loans for all schools in Wisconsin
- training and technical assistance grants to schools and libraries
- block grants to school and libraries in Wisconsin for the purchase of educational technology

Technology & Learning—
www.techlearning.com/

An educational technology journal for K-12 educators packed with practical ideas on how to use technology in the classroom, excellent feature articles, departments (columns), software and hardware reviews, etc.

TekMom—www.tekmom.com/

A site for the K-8 technology teacher with ideas, resources, and tools to help you do your job.

- hotlist of excellent sites for technology teachers
- hotlist of resources on the Internet for K-8 students
- information about children using the Internet along with parenting information
- fun and educational "after work" links for teachers

T.H.E Journal: Technological Horizons in Education—www.thejournal.com/

An educational technology journal for K-12, Higher Education and Technical College Educators. T.H.E Journal contains several feature articles, departments, and technology product advertising.

The Thornburg Center—www.tcpd.org/

The Thornburg Center is a well-known consulting firm that focuses on the impact of emerging technologies in three main areas: Education, the Corporate and Financial World, and School to Career. The Thornburg team ranges from cutting edge futurists to pragmatic curriculum designers and staff developers, and their practice is divided into two categories: Emerging Technology Futures and Professional Development.

- conference and workshop presentations by the firm's consultants are available online

The Top 101 Web Sites for Teachers—
www.assortedstuff.com/

A highly personal list of the 101 best web sites for use by teachers and students in K-12 classrooms created by an Instructional Technology Training Specialist for the Fairfax County Public Schools located just outside of Washington, DC.

- the best web sites for K-12 teachers listed under 10 separate categories
- web publishing and web page design for persons responsible for creating school web pages

U.S. Department of Education (DOE)—www.ed.gov/

The U.S. federal agency dealing with educational issues, programs, and services in the United States.

- federal grants for educational technology
- ERIC Digests (Research)
- Digest of Education Statistics
- Office of Educational Technology

The WebQuest Page—
http://edweb.sdsu.edu/webquest/webquest.html

The WebQuest site is designed to serve as a resource to those who are using the WebQuest model to teach with the web. A WebQuest is an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. WebQuests are designed to use learners' time well, to focus on using information rather than looking for it, and to support learners' thinking at the levels of analysis, synthesis and evaluation.

- WebQuest lessons for teachers

Wisconsin Association of Distance Education Networks (WADEN)—
www.uwex.edu/disted/waden/

WADEN seeks to provide cooperative and collaborative distance education courses, programs, meetings, and community events to Wisconsin students, educators and citizens.

- maps of distance education networks in Wisconsin
- technical standards and publications on distance education and distance education networks
- listserv of distance education professionals in Wisconsin

Wisconsin Association of School Librarians (WASL)—www.wla.lib.wi.us/wasl/index.html

WASL is the school library division of the Wisconsin Library Association (WLA). It supports the ongoing development, advancement and promotion of school libraries and media programs throughout Wisconsin.

- important new publication from WASL—*Linking Wisconsin's School Libraries & Classrooms: A Guide for Integrating Information & Technology Literacy*

Wisconsin Council for the Social Studies (WCSS)—www.soe.uwm.edu/wcss/wcss.htm

WCSS is dedicated to helping social studies teachers in Wisconsin provide students the best in content, methods and resources. WCSS strives to support teachers in professional development through the services they provide.

- Links to Social Studies Related Sites—hotlist of web sites for social studies teachers
- The Ideas News Letter—news, teacher tips, and social studies lessons

Wisconsin Council of Teachers of English Language Arts (WCTELA)—
www.uwec.edu/Academic/WCTE/

WCTELA is a non-profit organization of English Language Arts professionals who have dedicated their careers to the cause of education. WCTELA provides professional networks, services, and publications to educators interested in English Language Arts

- web site includes a newsletter, bulletin board, and information on professional publications, meetings and conferences

Wisconsin Council on Economic Education (WCEE)—www.WisEcon.org/

A professional association of economics and social studies educators. More than 3,500 teachers annually participate in the programs of the Wisconsin Council on Economic Education.

- Professor Weiser's Links to Economic Information

Wisconsin Department of Public Instruction (DPI)—www.dpi.state.wi.us/

The Wisconsin DPI advances the cause of public education and public libraries, and supervises public schools so that all school age children have access to high quality educational programs that meet high standards of excellence and all citizens have access to comprehensive public library resources and services. The Instructional Media and Technology Team, a part of the Division for Libraries, Technology and Community Learning, initiates, conducts and manages several programs dealing with school library media and educational technology

- Wisconsin's Model Academic Standards for Information & Technology Literacy (ITL) are online and available for downloading by PK-12 educators
- resources and tools to help implement the ITL Standards
- Technology Literacy Challenge Fund Grants (TLCF)—competitive grants for staff development training in the use of technology in teaching and learning
- assistance to schools in developing district technology plans
- technical assistance to school library media specialists and instructional technology coordinators on a variety of issues and topics such as facilities, common school fund, intellectual freedom and censorship, certification, standards, curriculum, and other topics related to instructional media and technology
- www.dpi.state.wi.us/pubsales—web page that lists all of DPI publications for sale

Wisconsin Educational Communications Board (ECB)—www.ecb.org/index.htm

The Wisconsin ECB provides instructional programs, projects, and services via telecommunications technologies in cooperation with Wisconsin's educational institutions. The ECB accomplishes this responsibility through planning, developing, acquiring, implementing, promoting and evaluating programs, projects, and services.

- publishes Parade of Programs: Teacher Guide to Instructional Television Programming and Multimedia Resources—with Curriculum Correlations (annual publication)
- produces Teaching Through Technology video tape series illustrating the best uses of technology in Wisconsin's schools and classrooms

Wisconsin Educational Media Association (WEMA)—www.wemaonline.org

WEMA is an association of library media and technology professionals in Wisconsin. The purpose of the association is to promote learning and access to information through the development and effective utilization of all forms of media and technology.

- excellent library media and technology conference each year in April
- fall media and technology workshops for members
- Clip Art CD-ROM available for sale and use with individual computers or on school networks

Wisconsin Mathematics Council, Inc. (WMC)—www.wismath.org/index.html

WMC is an educational organization whose mission is to provide leadership and service to the mathematics educators of Wisconsin. WMC is an affiliate of the National Council of Teachers of Mathematics

- math institutes and workshops for members
- journals and publications for math teachers
- links to web sites of value to mathematics teachers

Wisconsin Society of Science Teachers (WSST)—www.wsst.org/WSST.htm

WSST's purpose is to promote, support and improve science education in the state of Wisconsin by providing leadership, advocacy, and programs to enhance the teaching and learning of science.

- WSST supports the Science Olympiad, Science World, and the Wisconsin Science Congress
- conducts and promotes science forums and workshops across the state
- best science project web sites
- hotlist of favorite web sites for science teachers

Wisconsin State Reading Association (WSRA)—www.wsra.org/

The primary mission of the WSRA is to promote excellence in the teaching of reading. Over twenty councils coordinate their efforts with WSRA to promote literacy in Wisconsin and sponsor a variety of opportunities that focus on literacy issues and encourage professional growth.

- journals and publications on literacy/reading
- Resources—this section includes resources which members wish to share with other members
- Links—contains links to other sites for more information about literacy and education in Wisconsin
- WSRA Hotline—member listserv

Resource Providers (Listed alphabetically)

American Association of School Librarians (AASL)—www.ala.org/aasl/index.html

Apple Learning Interchange (Apple Computer, Inc.)—http://ali.apple.com/

AskERIC: Educational Resources Information Center (ERIC)—http://ericir.syr.edu/

Association for Educational Communications and Technology (AECT)—www.aect.org/

Association for Supervision and Curriculum Development (ASCD)—www.ascd.org/

B. J. Pinchbeck's Homework Helper—bjpinchbeck.com/

Blue Web'n (Pacific Bell)—http://pomo.kn.pacbell.com/wired/bluewebn/

Busy Teachers' WebSite K-12—www.ceismc.gatech.edu/busyt/

California Instructional Technology Clearinghouse—http://clearinghouse.k12.ca.us/

Canada's SchoolNet—www.schoolnet.ca/

CESA #8 Instructional Technology Page—www.cesa8.k12.wi.us/it/index.html

Classroom Connect—www.classroom.net/home.asp

Connecting Students Through Literacy—www.connectingstudents.com/literacy/

Consortium for School Networking (CoSN)—http://cosn.org/

CyberGuides: Teacher Guides & Student Activities—www.sdcoe.k12.ca.us/score/cyberguide.html

Developing Educational Standards (Putnam Valley Central Schools)—
http://putwest.boces.org/Standards.html

Education Commission of the States (ECS)—www.ecs.org/

Education World—www.education-world.com/

EduScapes: A Site for Life-Long Learners—http://eduscapes.com/

The Eisenhower National Clearinghouse for Mathematics and Science Education—www.enc.org/nf_index.htm

The Florida Instructional Technology Resource Center (ITRC)—www.itrc.ucf.edu/

From Now On: The Educational Technology Journal (Jamie McKenzie)—http://fno.org/

The Gateway to Educational Materials (GEM)—www.thegateway.org

IDE Corp.-Innovative Designs for Education—www.idecorp.com/

Intercultural E-Mail Classroom Connections—www.iecc.org

International Society for Technology in Education (ISTE)—www.iste.org/

HomeworkCentral.com—www.HomeworkCentral.com

K-12 Mathematics Curriculum Center—www.edc.org/mcc/

Kathy Schrock's Guide for Educators—http://school.discovery.com/schrockguide/

Learning & Leading with Technology: Serving Teachers in the Classroom (ISTE)—www.iste.org/

Lesson Plans and Resources for Social Studies Teachers—www.csun.edu/~hcedu013/

LION: Librarians Information Online Network—www.libertynet.org/lion/lion.html

Lightspan.com (The Lightspan Partnership)—www.lightspan.com/

MarcoPolo—www.wcom.com/marcopolo/

The Math Forum—http://forum.swarthmore.edu/

Mid-Continent Research for Education and Learning (McREL)—www.mcrel.org/

Michigan Department of Education Content Standards—htttp://cdp.mde.state.mi.us/Technology/ITAC/

Michigan Teacher Network—http://mtn.merit.edu/

Microsoft Classroom Teacher Network—www.microsoft.com/education/mctn/default.asp

MultiMedia Schools—www.infotoday.com/MMSchools/

National Aeronautics and Space Administration (NASA) Education Program—http://education.nasa.gov/

National Center for Technology Planning (NCTP)—www.nctp.com/

National Council for the Social Studies (NCSS)—www.ncss.org/home.html

National Council of Teachers of English (NCTE)—www.ncte.org/

National Council of Teachers of Mathematics—www.nctm.org/

National School Boards Assn Institute for the Transfer of Technology to Education (ITTE)—www.nsba.org/itte/

National Science Teachers Association (NSTA)—www.nsta.org/

NetTech: The Educational Technology Coordinator Website—www.nettech.org/tc/

New Hampshire Educators Online—www.nheon.org/

North Central Regional Educational Laboratory (NCREL)—www.ncrel.org/

Northeast Regional Technology in Education Consortium (NetTech)—www.nettech.org/tc/

Pathways to School Improvement—www.ncrel.org/sdrs/pathways.htm

SciCentral: K-12 Science—www.scicentral.com/K-12/index.html

Science Learning Network (SLN)—www.sln.org/

Social Studies Sources—http://education.indiana.edu/~socialst/

Study Web—www.studyweb.com/

TEACH Wisconsin—www.teachwi.state.wi.us/index.html

Technology & Learning—www.techlearning.com/

TekMom—www.tekmom.com/

T.H.E Journal: Technological Horizons in Education—www.thejournal.com/

The Thornburg Center—www.tcpd.org/

The Top 101 Web Sites for Teachers—www.assortedstuff.com/

U.S. Department of Education (DOE)—www.ed.gov/

The WebQuest Page—http://edweb.sdsu.edu/webquest/webquest.html

Wisconsin Association of Distance Education Networks (WADEN)—www.uwex.edu/disted/waden/

Wisconsin Association of School Librarians (WASL)—www.wla.lib.wi.us/wasl/index.html

Wisconsin Council for the Social Studies (WCSS)—www.soe.uwm.edu/wcss/wcss.htm

Wisconsin Council of Teachers of English Language Arts (WCTELA)—www.uwec.edu/Academic/WCTE/

Wisconsin Council on Economic Education (WCEE)—www.WisEcon.org/

Wisconsin Department of Public Instruction (DPI)—www.dpi.state.wi.us/

Wisconsin Educational Communications Board (ECB)—www.ecb.org/index.htm

Wisconsin Educational Media Association (WEMA)—www.wemaonline.org

Wisconsin Mathematics Council, Inc. (WMC)—www.wismath.org/index.html

Wisconsin Society of Science Teachers (WSST)—www.wsst.org/WSST.htm

Wisconsin State Reading Association (WSRA)—www.wsra.org/